United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Illinois Agricultural Experiment Station

Soil Survey of Monroe County, Illinois

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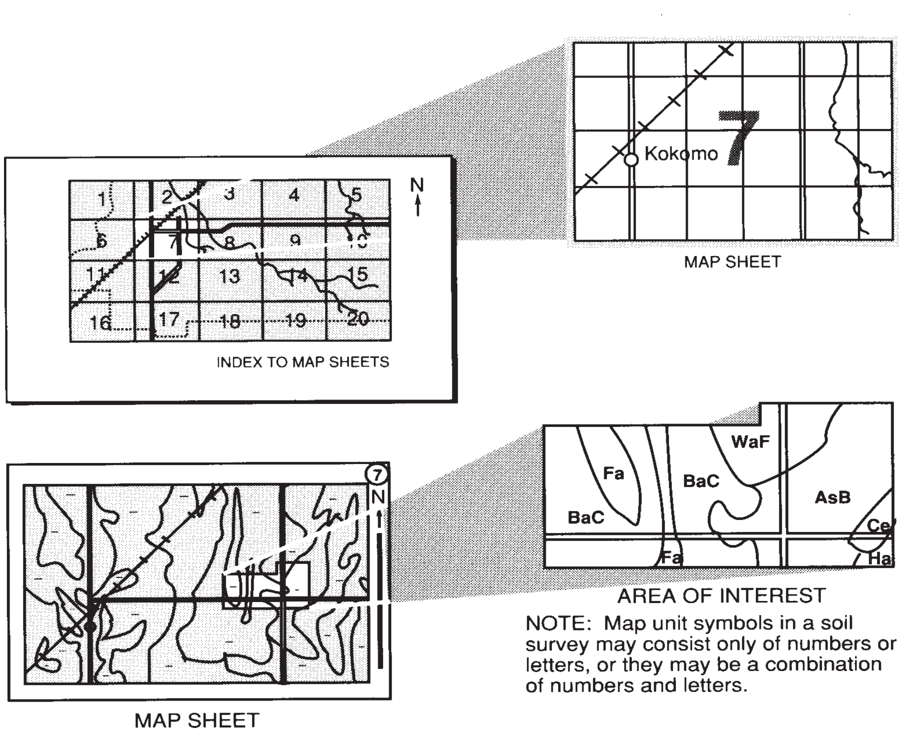
How To Use This Soil Survey

This publication consists of a manuscript and a set of soil maps. The information provided can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet, and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Numerical Index to Map Units**, which lists the map units by symbol and name and shows the page where each map unit is described. The map unit symbols and names also appear as bookmarks, which link directly to the appropriate page in the publication.

The **Contents** shows which table has data on a specific land use for each soil map unit. Also see the **Contents** for other sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1997. Soil names and descriptions were approved in 1997. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1997. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Monroe County Soil and Water Conservation District. Funding was provided by the Monroe County Board and the Illinois Department of Agriculture.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Cover: A landscape view of the Paint Creek watershed in Monroe County.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Numerical Index to Map Units

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

William J. Gradle
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Monroe County, Illinois

By Randall A. Leeper, Natural Resources Conservation Service

Fieldwork by Steven K. Higgins, Samuel J. Indorante, Randall A. Leeper, William M. McCauley, and Randall J. Moore, Natural Resources Conservation Service, and Richard J. Christ and Darrel E. Leach, Monroe County

Map compilation by Steven K. Higgins and Randall A. Leeper, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
the Illinois Agricultural Experiment Station

Monroe County is in southwestern Illinois (fig. 1). It has an area of 254,355 acres. It is bordered on the west by the Mississippi River, on the northeast by St. Clair County, and on the south by Randolph County. In 1990, the population of the county was 22,422 (U.S. Department of Commerce, 1990). The population of Waterloo, the county seat and largest city, was estimated at 7,281 in 1997. Other towns and villages in the county are Columbia, Fults, Hecker, Maeystown, Renault, and Valmeyer.

This soil survey updates the survey of Monroe County, Illinois, published in 1987 (Higgins, 1987). It provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the Survey Area

This section provides general information about Monroe County. It describes history and development; physiography, relief, and drainage; natural resources; transportation facilities; and climate.

History and Development

In 1787, the area that is now Monroe County was annexed into the Union as part of the Northwest Territory (Bundey and Klein, 1967). It was originally part of Illinois County. In 1816, Monroe County became the tenth county in Illinois. It is named for the fifth president of the United States, James Monroe.

The first settlers in the area were the Mound Builders. These Indians inhabited the area for hundreds of years and were part of a large population centered at Cahokia (Monks Mound).

The first European in the area that is now Monroe County was Jacques Marquette, who traveled down the Mississippi River by canoe in 1673. After Robert de La Salle explored the Mississippi River valley in 1682, this area was controlled by the French; the French settled the area during the 1700s. During the late 1700s and early 1800s, Americans from the eastern states and territories moved west and settled the area. In about 1840, German immigrants from St. Louis and from Germany wanting good land and wishing to live in a slave-free state settled in Monroe County. German customs and traditions are still evident in the county. Irish, Welsh, Scottish, and English immigrants also settled in Monroe County (Bundey and Klein, 1967).

Agriculture and agribusiness are the major industries in Monroe County. Most of the land is used for agriculture. The metropolitan area of St. Louis, Missouri, is within commuting distance; consequently, the local agricultural economy is increasingly being affected as farmland is converted to urban uses.

Physiography, Relief, and Drainage

About two-thirds of the soils in the county are on uplands, which are mostly loess-covered Illinoian

Figure 1.—Location of Monroe County in Illinois.

glacial till plains. The thickness of the loess ranges from more than 100 feet along the bluffs to less than 10 feet in the eastern part of the county. About 15,000 acres of the uplands has karst topography. This topography consists of conical depressions, called sinkholes or sinks, and interconnecting ridges. Most sinkholes are open at the bottom and allow water to drain directly into the underlying creviced limestone bedrock. In the less sloping karst areas, some sinkholes are closed at the bottom.

The alluvial soils on the flood plains along the Mississippi River, the Kaskaskia River, and their tributary streams make up about one-third of the county. Also, small areas of alluvial and lacustrine soils are on lake plains and terraces along the Kaskaskia River.

Elevation of the uplands ranges from about 400 to 750 feet above mean sea level. Elevation of the flood plains along the Mississippi River ranges from 380 feet above mean sea level near the river to 400 feet near the bluff. In many places along the bluff, a nearly vertical bedrock escarpment rises 200 to 300 feet above the flood plain.

Monroe County is drained by the Mississippi River on the west and by the Kaskaskia River on the east. A high ridge in the center of the county separates the Mississippi River and Kaskaskia River watersheds. Fountain and Carr Creeks, in the northern and central parts of the county, drain into the Mississippi River. Maeystown, Monroe City, and Fults Creeks flow to the southwest into the Mississippi River. Rockhouse, Prairie du Long, Richland, and Black Creeks flow eastward into the Kaskaskia River. Horse Creek flows southeastward into adjacent Randolph County and then into the Kaskaskia River.

Natural Resources

Soil is the chief natural resource in Monroe County. About 167,000 acres is used as cropland, and about 8,000 acres is used for pasture. The main crops are corn, soybeans, wheat, grain sorghum, and hay. Other farm products include barley, fruits and vegetables, cattle, hogs, dairy products, and poultry. In 1996, there were 29,300 hogs and 10,000 cattle in the county (Illinois Department of Agriculture and USDA, 1997).

Forestland makes up about 25,000 to 27,000 acres in the county. It is in scattered areas throughout the county, but large tracts are along the major drainageways and near the bluff along the Mississippi River flood plain. These forested areas provide a source of wood products and habitat for wildlife.

There are approximately 1,500 ponds and reservoirs in Monroe County. The county also has about 230 miles of streams.

Subsurface natural resources include water, limestone, and oil. Adequate water supplies for farm and domestic use are available in most parts of the county. In small areas where aquifers are deep, however, an adequate supply is difficult to obtain. The county has several limestone quarries. The limestone is used for agricultural lime and in construction.

Transportation Facilities

The transportation facilities available in Monroe County include interstate highways, railroads, buses, and airports. Interstate 255 crosses the northern part of the county and provides quick access to St. Louis, Missouri, and the rest of the interstate system. State Highways 3, 156, and 159 also cross the county.

Several county roads provide important transportation links. Most of the secondary township and county roads are blacktopped. One railroad provides freight service through the county. Columbia has a small airport, and several smaller landing strips are in the county. Daily bus service provides a link to the St. Louis metropolitan area.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Waterloo, Illinois, in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

Monroe County is cold in winter and quite hot in summer. Winter precipitation, frequently snow, results in a good accumulation of soil moisture by spring and minimizes drought in summer on most soils. The normal annual precipitation is adequate for all crops that are adapted to the temperature and growing season in the survey area.

In winter, the average temperature is about 33 degrees F and the average daily minimum temperature is 24 degrees. The lowest temperature on record, which occurred on January 17, 1977, is -16 degrees. In summer, the average temperature is 76 degrees and the average daily maximum temperature is 87 degrees. The highest recorded temperature, which occurred at Waterloo on August 21, 1962, is 107 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is about 40 inches. Of this total, about 21 inches, or 53 percent, usually falls in April through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.96 inches at Waterloo on November 2, 1972. Thunderstorms occur on about 45 days each year, and most occur between April and August.

The average seasonal snowfall is about 16 inches. The greatest snow depth at any one time during the period of record was 13 inches. On an average, 10 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 70 percent of the time in summer and 50 percent in winter. The prevailing wind is from the south in the summer and from the west and northwest in the winter and spring. Average windspeed is highest, 9 miles per hour, in March.

Tornadoes and severe thunderstorms occur occasionally. They are of local extent and of short duration and cause only sparse damage in narrow areas. Hailstorms sometimes occur during the warmer periods.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the degree of erosion; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. To study the soil profile, which is the sequence of natural layers, or horizons, soil scientists examine the soil with the aid of a soil probe. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind or segment of the landscape. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landscape, soil scientists develop a concept, or model, of how they were formed.

Individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Fieldwork in Monroe County consisted primarily of soil transects conducted by soil scientists. Soil transects are a systematic method of sampling a

specific soil type. Soil borings are taken at regular intervals. Soil scientists then record the characteristics of the soil profiles that they study. They note soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. This information can then be used to run statistical analyses for specific soil properties. The results of these analyses, along with other observations, enable the soil scientists to assign the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

Aerial photographs used in this survey were taken in 1992 and 1993. Soil scientists also studied U.S. Geological Survey topographic maps (enlarged to a scale of 1:12,000), orthophotographs, and infrared photography to relate land and image features. Specific soil boundaries were drawn on the orthophotographs. Adjustments of soil boundary lines were made to coincide with the U.S. Geological Survey topographic map contour lines and tonal patterns on aerial photographs.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the general processes of soil formation. It also describes the system of soil classification.

Factors of Soil Formation

Soil forms through processes that act on deposited geologic material. The factors of soil formation are the physical and mineralogical composition of the parent material; the climate in which the soil formed; the plant and animal life on and in the soil; the relief; and the length of time during which the processes of soil formation have acted on the parent material (Jenny, 1941).

Climate and plant and animal life are the major active factors of soil formation. They act directly on the parent material, either in place or after being moved from place to place by water, wind, or glaciers, and slowly change it into a natural body that has genetically related horizons. Relief modifies soil formation and can inhibit soil formation on the steeper eroded slopes and in wet, depressional or nearly level areas by controlling the moisture status of soils. Finally, time is needed for changing the parent material into a soil that has differentiated horizons.

The factors of soil formation are so closely interrelated and conditioned by each other that few generalizations can be made regarding the effects of any one factor unless the effects of the other factors are understood.

Parent Material

Parent material is the geologic material in which a soil forms. Most of the soils of Monroe County were derived from parent materials that are a direct or indirect result of glaciers. The parent materials in this survey area are loess, glacial till, glacial outwash, alluvium, and lacustrine deposits. A few soils formed in bedrock residuum.

Loess, or wind-deposited silty material, is the most extensive parent material in Monroe County. The loess ranges in thickness from more than 100 feet near the bluffs to less than 10 feet in the eastern part of the county. Menfro and Winfield soils are examples of soils that formed in loess.

Glacial till is nonstratified drift transported and deposited directly by glacial ice with a minimum of water action. It is a mixture of particles of various sizes. The small pebbles in glacial till have sharp corners, a characteristic indicating that they have not been worn by water. The till is acid and firm and ranges from loam to clay, depending on the degree of weathering. Hickory soils are examples of soils that formed in glacial till.

Glacial outwash was deposited by running water from melting glaciers. The size of the particles varies, depending on the speed of the stream that carried the material. When the water slowed down, the coarser particles were deposited. The finer particles were carried a greater distance by more slowly moving water. Meadowbank soils formed in glacial outwash.

Alluvium is material deposited by streams on their flood plains. This material varies in texture, depending on the speed of the water from which it was deposited. Birds and Wakeland soils formed in recent silty alluvium along the Kaskaskia River and its tributaries. Alluvial soils on the flood plain along the Mississippi River range from the sandy Sarpy soils to the clayey Booker soils.

Lacustrine material was deposited under still or ponded glacial meltwater. The coarser material drops out of moving water as outwash; consequently, only the finer material, such as silt and clay, remains to settle out in the still water. Meltwater from the Mississippi River backed up the flood plains along the Kaskaskia River and its larger tributaries to form glacial lakes. Two distinct periods of glacial lake formation occurred. Redbud and Millstadt soils, on the higher lacustrine terraces, formed in about 40 to 60 inches of loess overlying clayey lacustrine material. Colp, Hurst, and Okaw soils, on the lower lake plains, formed in about 20 inches of loess or other silty material overlying clayey lacustrine material.

A few soils, such as Neotoma soils, formed in a thin mantle of loess over material weathered from bedrock. These parent materials are not extensive and are only on deeply dissected side slopes in the uplands.

In Monroe County, a unique geologic condition has

resulted in karst topography. The karst area is characterized by rolling hills, circular depressions called sinkholes, and caves. Typically, it has a scarcity of streams that have a continuous surface flow. The geologic features contributing to the karst formation are the permeable Wisconsinan loess; a thin deposit of Illinoian glacial till underlying the loess; and a thin, jointed layer of Mississippian St. Louis Limestone underlying the loess and till. Some of the surface water flows directly into the sinkholes and then into the underground cave-stream system. The Menfro soils that formed in the thick loess deposits and the Ruma soils that formed in the moderately thick loess deposits dominate the karst area.

Climate

The climate in Monroe County has significantly affected the soil-forming processes. Climatic factors, such as precipitation and temperature, have influenced the existing plant and animal communities and the physical and chemical weathering of the parent material.

During the colder glacial epoch, the cold temperatures in the soil reduced the rate of chemical reactions in the existing soils and in the raw parent material. Increased frost action, resulting from the periglacial climate, caused frost churning in some soils. Strong winds swept across the recently deposited glacial material, which was largely devoid of vegetation, and carried away large amounts of silt-sized particles, which were later deposited as loess. When the glacial ice retreated and the climate gradually warmed, deciduous forests eventually succeeded the boreal vegetation.

The county currently has a humid, temperate climate, which has persisted for thousands of years. In this climatic environment, physical and chemical weathering of the parent material can occur along with the accumulation of organic matter, the decomposition of minerals, the formation and translocation of clay, the leaching of soluble compounds, and alternating periods of freezing and thawing.

The microclimate in a given area can affect soil formation. Pierron soils, which are in depressional or low-lying areas, receive runoff from the higher adjacent slopes. The runoff creates a wet microclimate that results in prolonged saturation, the reduction of iron, and a gray subsoil.

Climate also influences the kind and extent of plant and animal life. The climate in Monroe County has favored prairie grass and hardwood forests. Heavy rains can harm exposed areas of soil that have been farmed. Spring rains and wind can cause extensive erosion when crop residue and trees are removed from the surface. More soil will be lost through erosion each year than is formed by natural processes.

Living Organisms

The vegetation under which a soil forms influences soil properties, such as color, structure, reaction, and content and distribution of organic matter. Vegetation extracts water from the soil, recycles nutrients, and adds organic material to the soil. Gases derived from root respiration combine with water to form acids that influence the weathering of minerals. Because of the lower content of organic matter, soils that formed under forest vegetation are generally lighter colored than those that formed under grasses.

At the time Monroe County was settled, the native vegetation consisted mainly of hardwood forests. Differences in natural soil drainage and minor variations in the parent material have affected the composition of the forest species.

Bacteria, fungi, and many other micro-organisms decompose organic material and release nutrients to growing plants. They also influence the formation of peds. Soil properties, such as drainage, temperature, and reaction, influence the type of micro-organisms that live in the soil. Fungi are generally more active in the acid soils, and bacteria are more active in the less acid soils.

Earthworms, insects, and small burrowing animals mix the soil and create small channels that influence soil aeration and the percolation of water. Earthworms help to incorporate crop residue or other organic material into the soil. The organic matter improves tilth. In areas that are well populated with earthworms, the leaf litter that accumulates on the soil in the fall is generally incorporated into the soil by the following spring. If the earthworm population is low, part of the leaf litter can remain on the surface of the soil for several years.

Human activities have significantly influenced soil formation. Native forests have been cleared and developed for farming and other uses. Cultivation has accelerated erosion on sloping soils; wet soils have been drained; and manure, lime, chemical fertilizer, and pesticides have been applied in cultivated areas. Cultivation has affected soil structure and compaction and lowered the content of organic matter. The development of land for urban uses or for mining has significantly influenced the soils in some areas.

Relief

Relief, which includes elevation and topography, influences soil formation through its effect on runoff and erosion. To a lesser extent, it also influences soil temperature, the plant cover, depth to the water table, and the accumulation and removal of organic matter.

Because it causes differences in external soil drainage, relief can differentiate soils that formed in the same kind of parent material. Water that runs off the more sloping soils can collect in depressions or swales. Ruma and Pierron soils both formed in loess. The sloping to steep Ruma soils on convex summits and side slopes are well drained. They are in areas where external drainage is good. The nearly level Pierron soils are poorly drained. They are in slight depressions that receive runoff from higher adjacent soils, and internal drainage is poor.

Relief varies in Monroe County. On the ground moraines in the eastern part of the county, the soils generally range from nearly level on the interfluves to moderately sloping along the drainageways. Relief becomes more pronounced in the western part of the county near the bluff. In the Mississippi River and Kaskaskia River valleys, relief is nearly level to gently undulating.

Time

The length of time that the parent material has been exposed to soil-forming processes influences the nature of the soil that forms. The youngest soils in the county, such as Birds, Rocher, and Wakeland soils, formed in recent alluvium. These soils can be stratified and have weakly expressed horizons because the soil-forming processes are interrupted with each new deposition.

Glaciers advanced over much of Monroe County during the Illinois Glaciation. Glacial deposits, in the form of loess and alluvium, from the Wisconsinan Glaciation were deposited many years later. Glacial deposits of Wisconsinan age are geologically young, yet enough time has elapsed for the initially raw parent material to weather into soils that have distinct horizons. In most of these soils, including Caseyville, Menfro, and Winfield soils, carbonates have been leached, clay has been translocated from the A horizon to the B horizon, and organic matter has accumulated in the A horizon.

The residuum and some of the colluvium associated with the Mississippian bedrock are the oldest of the parent materials in the county. Soils that formed in these parent materials have weakly expressed to well expressed horizons, depending on the nature of the parent material. Lacrescent soils formed in colluvium along the bluff and have weakly expressed horizons. Neotoma and Westmore soils formed in residuum and colluvium derived from interbedded shale and sandstone. They have well expressed horizons.

Processes of Soil Formation

Soil forms through complex processes. These processes can be grouped into four general categories—additions, removals, transfers, and transformations. All of these processes affect soil formation, although in differing degrees.

The accumulation of organic matter in the A horizon of the soils in Monroe County is an example of an addition. This accumulation is the main reason for the dark color of the A horizon. The color of the raw parent material generally is uniform throughout.

The leaching of carbonates from the upper several feet in many of the deep loess soils is an example of a removal. The parent material of these soils was initially calcareous, but the carbonates have been leached from the soil profile by percolating water.

The translocation of clay from the A horizon to the B horizon in many soils on uplands in the county is an example of a transfer. The A horizon (or an E horizon) is a zone of eluviation, or loss. The B horizon is a zone of illuviation, or gain. In Marine, Winfield, and other soils, the B horizon has more clay than the parent material and the A horizon has less clay. In the B horizon of some soils, faint to prominent clay films are in pores and on faces of peds.

An example of a transformation is the reduction and solubilization of ferrous iron. This process takes place under wet, saturated conditions in which there is a lack of molecular oxygen. Gleying, or the reduction of iron, is evident in Ambraw, Beaucoup, and Pierron soils, which have a dominantly gray subsoil. The gray color indicates the presence of reduced ferrous iron, which, in turn, implies wetness. Reduced iron is soluble, but it commonly has been removed short distances in the soils, stopping either in the horizon where it originated or in an underlying horizon. Part of this iron can be reoxidized and segregated in the form of stains, masses, nodules, concretions, or bright yellow and red concentrations (formerly called mottles).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquoll (*Aqu*, meaning water, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Endoaquolls (*Endo*, meaning soils with endosaturation, plus *aquoll*, the suborder of the Mollisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. An example is Fluvaquentic Endoaquolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, thickness of the root zone, consistence, moisture equivalent, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series. An example is the Beaucoup series.

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each soil series recognized in the survey area is described. Each series description is followed by descriptions of the associated detailed soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 1998). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings "Use and Management of the Soils" and "Soil Properties."

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives some of the soil properties and qualities that may affect planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on

the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Homen silt loam, 5 to 10 percent slopes, eroded, is a phase of the Homen series.

Some map units are made up of two or more major soils. These map units are called complexes. A *complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils are somewhat similar in all areas. Bunkum-Atlas silty clay loams, 10 to 18 percent slopes, severely eroded, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Riverwash is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables (see Contents) give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Ambraw Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Fluvaquentic Endoaquolls

Typical Pedon for MLRA 115B

Ambraw silty clay loam, on a nearly level flood plain in a cultivated field, at an elevation of about 385 feet above mean sea level; about 2 miles southeast of Fults, in Monroe County, Illinois; approximately 2,000 feet northwest of field lane and 150 feet northeast of railroad tracks; T. 4 S., R. 10 W.; USGS Renault, Illinois, topographic quadrangle; lat. 38 degrees 08 minutes 27 seconds N. and long. 90 degrees 10 minutes 47 seconds W., NAD 27:

Ap—0 to 11 inches; very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; common fine roots; 36 percent clay and 19 percent sand; slightly acid; abrupt smooth boundary.

Bg1—11 to 15 inches; dark gray (10YR 4/1) clay; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots; common fine prominent dark brown (7.5YR 3/4) masses of iron accumulation in the matrix; 41 percent clay and 24 percent sand; neutral; clear smooth boundary.

Bg2—15 to 21 inches; dark gray (10YR 4/1) clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; 38 percent clay and 28 percent sand; neutral; clear smooth boundary.

Bg3—21 to 25 inches; gray (10YR 5/1) clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; 30 percent clay and 43 percent sand; neutral; clear smooth boundary.

Bg4—25 to 34 inches; gray (10YR 5/1) sandy clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; very friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine prominent strong brown (7.5YR 4/6) and few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 20 percent clay and 59 percent sand; neutral; clear smooth boundary.

BCg—34 to 42 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium prismatic structure parting to moderate fine subangular blocky; very friable; few very fine roots; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 13 percent clay and 69 percent sand; neutral; clear smooth boundary.

CBg1—42 to 54 inches; gray (10YR 5/1) loam; weak medium prismatic structure parting to weak medium subangular blocky; very friable; few very fine roots; many coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 11 percent clay and 50 percent sand; neutral; clear smooth boundary.

CBg2—54 to 60 inches; gray (10YR 5/1) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 21 percent clay and 8 percent sand; neutral.

Range in Characteristics

Depth to the base of soil development: Typically 40 to 50 inches but ranges to more than 60 inches

Thickness of the mollic epipedon: 10 to 24 inches

Texture of the particle-size control section: Averages between 24 and 35 percent clay and between 15 and 50 percent fine sand or coarser

Depth to carbonates (if they occur): More than 50 inches

Other features: Some pedons have an AB or a BA horizon.

Ap and A horizons:
Hue—10YR
Value—2 or 3 (3 to 5 dry)
Chroma—1 or 2
Texture—silty clay loam or clay loam

Bg horizon, upper part:
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—1 or 2
Texture—clay, clay loam, or loam

Bg horizon, lower part:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—clay loam, loam, or sandy clay loam

BCg, CBg, or Cg horizon (if it occurs):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 or 5
Chroma—0 to 2
Texture—clay loam, sandy clay loam, sandy loam, or loam; commonly contains strata of loam, sandy loam, silt loam, or loamy sand

8302A—Ambraw silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Loamy alluvium
Flooding frequency: Occasional

Map Unit Composition

Ambraw and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
• Soils that have a thicker dark surface layer than that of the Ambraw soil
• Soils that contain more silt and less sand in the upper part of the subsoil than the Ambraw soil
• Soils that contain more sand in the subsoil than the Ambraw soil

Dissimilar soils:
• The somewhat poorly drained Nameoki and Shaffton soils in the higher landform positions
• Small areas of very poorly drained soils in depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Arenzville Series

Taxonomic classification: Coarse-silty, mixed, superactive, nonacid, mesic Typic Udifluvents

Typical Pedon for MLRA 115B

Arenzville silt loam, in a nearly level area in a cultivated field, at an elevation of about 390 feet above mean sea level; about 2 miles west of Modoc, in Randolph County, Illinois; approximately 1,500 feet west of Bluff Road and 50 feet north of field lane; T. 5 S., R. 9 W.; USGS Prairie du Rocher, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 03 minutes 55 seconds N. and long. 90 degrees 03 minutes 58 seconds W., NAD 27:

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; very friable; many very fine roots; slightly acid; clear smooth boundary.
C1—9 to 22 inches; brown (10YR 4/3) silt loam; massive; very friable; common very fine roots; slightly acid; clear smooth boundary.
C2—22 to 31 inches; brown (10YR 4/3) silt loam; massive; friable; few very fine roots; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; few fine irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation in the matrix; slightly acid; clear smooth boundary.
Ab1—31 to 44 inches; very dark brown (10YR 2/2) silt loam; moderate fine subangular blocky structure; friable; few very fine roots; common fine faint brown (10YR 4/3) masses of iron accumulation in the matrix and common fine prominent dark reddish brown (5YR 3/3) masses of iron accumulation on faces of peds; few fine irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation; neutral; gradual smooth boundary.
Ab2—44 to 56 inches; very dark brown (10YR 2/2) silt loam; weak fine subangular blocky structure;

friable; few very fine roots; few fine irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation; neutral; gradual smooth boundary.

Bwb—56 to 70 inches; brown (10YR 4/3) silty clay loam; weak medium subangular blocky structure; friable; common fine faint grayish brown (10YR 5/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation; neutral.

Range in Characteristics

Depth to the Ab horizon: 20 to 60 inches
Texture of the particle-size control section: Averages between 10 and 18 percent clay
Reaction: Moderately acid to slightly alkaline
Depth to carbonates (if they occur): More than 60 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5 (6 or 7 dry)
Chroma—2 or 3
Texture—silt loam

C horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—dominantly silt loam; thin lenses with coarser texture are common

Ab horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam; thin strata with coarser texture are common

Bwb or Btb horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam; thin strata with coarser texture are common

C´ horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—1 to 6
Texture—typically silt loam; thin strata with coarser texture are common

8078A—Arenzville silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Silty alluvium
Flooding frequency: Occasional

Map Unit Composition

Arenzville and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that are deeper to the dark buried soil than the Arenzville soil
- Soils that have a clayey dark buried soil
- Soils that are well drained

Dissimilar soils:
- Small areas of poorly drained soils in slight depressions
- The well drained Drury soils, which are more sloping than the Arenzville soil and are closer to the bluffs

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Atlas Series

Taxonomic classification: Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs

Typical Pedon for MLRA 114

Atlas silty clay loam, on a slope of 12 percent, on a backslope in a severely eroded area in a cultivated field, at an elevation of about 485 feet above mean sea level; about 5 miles east of Waterloo, in Monroe County, Illinois; approximately 820 feet west and 400 feet south of the northeast corner of sec. 26, T. 2 S., R. 9 W.; USGS Paderborn, Illinois, topographic

quadrangle; lat. 38 degrees 20 minutes 15 seconds N. and long. 90 degrees 02 minutes 56 seconds W., NAD 27:

Ap—0 to 9 inches; brown (10YR 4/3) silty clay loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; common very fine and few fine roots; few fine tubular pores; few fine irregular dark reddish brown (5YR 3/3) masses of iron-manganese accumulation with clear boundaries; common fine and medium rounded black (N 2.5/0) iron-manganese nodules with sharp boundaries; neutral; abrupt smooth boundary.

2Bt—9 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; weak fine prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; few fine tubular pores; few faint brown (10YR 5/3) clay films on faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions and common fine prominent yellowish red (5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular dark brown (7.5YR 3/4) iron-manganese nodules with clear boundaries; about 1 percent pebbles; moderately acid; clear smooth boundary.

2Btg1—21 to 31 inches; gray (10YR 6/1) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; common faint grayish brown (10YR 5/2) clay films on faces of peds and few prominent very dark grayish brown (10YR 3/2) organo-clay films lining root channels and pores; many fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular dark reddish brown (5YR 3/3) iron-manganese nodules with clear boundaries; about 2 percent pebbles; slightly acid; clear smooth boundary.

2Btg2—31 to 41 inches; gray (10YR 6/1) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few very fine roots; common faint grayish brown (10YR 5/2) clay films on faces of peds; many coarse prominent strong brown (7.5YR 5/6) and few medium prominent reddish brown (5YR 4/4) masses of iron accumulation in the matrix; few medium rounded dark brown (7.5YR 3/2) iron-manganese concretions with sharp boundaries; about 2 percent pebbles; neutral; clear smooth boundary.

2Btg3—41 to 51 inches; gray (10YR 6/1) silty clay; moderate coarse prismatic structure parting to moderate medium angular blocky; very firm; few very fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; many coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) iron-manganese nodules with clear boundaries; about 5 percent pebbles; slightly alkaline; clear smooth boundary.

2Btg4—51 to 65 inches; gray (10YR 6/1) silty clay; weak coarse prismatic structure parting to weak medium angular blocky; very firm; common distinct gray (10YR 5/1) clay films on faces of peds; many coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many medium and coarse black (10YR 2/1) iron-manganese concretions with sharp boundaries; about 5 percent pebbles; slightly alkaline; gradual smooth boundary.

2Btg5—65 to 80 inches; gray (10YR 5/1) silty clay; weak coarse prismatic structure parting to weak medium angular blocky; very firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; many coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many coarse black (10YR 2/1) iron-manganese concretions with sharp boundaries; about 5 percent pebbles; slightly alkaline.

Range in Characteristics

Depth to the base of the argillic horizon: 42 to more than 80 inches

Thickness of the loess or silty pedisediment: 0 to 20 inches

Texture of the particle-size control section: Averages between 35 and 45 percent clay and between 10 and 35 percent sand

Other features: Some pedons have an E or a BE horizon.

Ap or A horizon:

Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—1 to 4
Texture—silt loam or loam; silty clay loam or clay loam in some pedons in severely eroded areas

Bt or 2Bt horizon:

Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—3 or 4
Texture—clay loam, silty clay loam, silty clay, or clay

Btg or 2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—clay loam, silty clay loam, silty clay, or clay

BC and C horizons or 2BC and 2C horizons (if they occur):
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 6
Texture—silty clay loam, clay loam, or loam

7D3—Atlas silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Till plains
Position on the landform: Erosional side slopes

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Glacial till that contains a strongly developed paleosol
Flooding: None

Map Unit Composition

Atlas and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that contain less clay in the surface layer than the Atlas soil
- Soils that contain less clay in the subsoil than the Atlas soil
- Areas of soils that are less eroded than the Atlas soil

Dissimilar soils:
- The somewhat poorly drained Wakeland soils on narrow flood plains
- The well drained Hickory soils on the steeper side slopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Aviston Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon for MLRA 114

Aviston silt loam, in a gently sloping area in a cultivated field, at an elevation of about 500 feet above mean sea level; about 1 mile southwest of Addieville, in Washington County, Illinois; approximately 2,540 feet north and 1,820 feet east of the southwest corner of sec. 2, T. 2 S., R. 4 W.; USGS Okawville, Illinois, topographic quadrangle; lat. 38 degrees 22 minutes 53 seconds N. and long. 89 degrees 30 minutes 20 seconds W., NAD 27:

Ap—0 to 10 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate very fine granular structure; friable; common very fine and fine roots throughout; about 18 percent clay; neutral; abrupt smooth boundary.

A—10 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure parting to moderate fine granular; friable; common very fine and fine roots throughout; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; about 22 percent clay; neutral; clear smooth boundary.

Bt1—16 to 23 inches; brown (10YR 4/3) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots between peds; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; about 33 percent clay; slightly acid; clear smooth boundary.

Bt2—23 to 32 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots between peds; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and few prominent very dark gray (10YR 3/1) organic coatings lining root channels; common fine faint light brownish gray (10YR 6/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation; about 30 percent clay; slightly acid; clear smooth boundary.

Bt3—32 to 39 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky;

friable; few very fine roots between peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds and few prominent very dark gray (10YR 3/1) organic coatings lining root channels; common fine faint light brownish gray (10YR 6/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation; about 28 percent clay; slightly acid; gradual smooth boundary.

Bt4—39 to 48 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure; friable; few very fine roots between peds; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds and few prominent very dark gray (10YR 3/1) organic coatings lining root channels; common fine faint light brownish gray (10YR 6/2) iron depletions and common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation; about 28 percent clay; slightly acid; gradual smooth boundary.

Bt5—48 to 67 inches; brown (10YR 5/3) silt loam; weak medium prismatic structure; friable; few very fine roots between peds; few faint grayish brown (10YR 5/2) clay films on vertical faces of peds and very few prominent very dark gray (10YR 3/1) organic coatings lining root channels; many fine faint light brownish gray (10YR 6/2) iron depletions and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation; about 24 percent clay; slightly acid; clear smooth boundary.

2BCt—67 to 80 inches; brown (7.5YR 5/3) silt loam; weak coarse prismatic structure; friable; few distinct brown (10YR 4/3) clay films on vertical faces of peds; many medium faint pinkish gray (7.5YR 6/2) iron depletions and many fine and medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (10YR 2/1) masses of iron-manganese accumulation; about 17 percent clay; slightly acid.

Range in Characteristics

Depth to the base of the argillic horizon: 52 to more than 80 inches
Thickness of the loess: About 60 to 80 inches
Thickness of the mollic epipedon: 10 to 20 inches
Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand
Other features: Some pedons have an AB or a BA horizon.

Ap horizon:
Hue—10YR
Value—3 (5 dry); 2 or 3 (4 or 5 dry) in undisturbed areas
Chroma—1 to 3; 1 or 2 in undisturbed areas
Texture—silt loam

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6; 2 to 6 in the lower part
Texture—silty clay loam; silt loam in the lower part in some pedons

2Bt, 2BC, and 2C horizons (if they occur):
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—1 to 4
Texture—commonly silt loam; silty clay loam in the upper part in some pedons; loam or clay loam in the lower part in some pedons

438B—Aviston silt loam, 2 to 5 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Aviston and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a lighter colored surface layer than that of the Aviston soil
• Soils that are well drained
• Areas of soils that are less sloping than the Aviston soil

Dissimilar soils:
• The poorly drained Virden soils in depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

438C2—Aviston silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits, shoulders, and backslopes

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Aviston and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
• Soils that have a lighter colored surface layer than that of the Aviston soil
• Soils that are well drained
• Areas of soils that are more sloping or less sloping than the Aviston soil

Dissimilar soils:
• The poorly drained Virden soils in depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Banlic Series

Taxonomic classification: Coarse-silty, mixed, active, acid, mesic Fragic Epiaquepts

Typical Pedon for MLRA 114 and MLRA 115B

Banlic silt loam, in a nearly level area on a flood-plain step, in an idle field, at an elevation of about 395 feet above mean sea level; about 2 miles southeast of Pinckneyville, in Perry County, Illinois; approximately 226 feet north and 484 feet west of the center of sec. 31, T. 5 S., R. 2 W.; USGS Pyatts, Illinois, topographic quadrangle; lat. 38 degrees 02 minutes 50 seconds N. and long. 89 degrees 21 minutes 50 seconds W., NAD 27:

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; few very fine and fine roots; few fine iron-manganese concretions; slightly alkaline; abrupt smooth boundary.

A—5 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium subangular blocky structure; friable; few very fine and fine roots; many fine faint dark yellowish brown (10YR 4/4) masses of iron in the matrix; few fine iron-manganese concretions; neutral; abrupt smooth boundary.

E—8 to 13 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; weak fine and medium subangular blocky structure; friable; few very fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; few fine iron-manganese concretions; very strongly acid; clear smooth boundary.

Bw—13 to 21 inches; pale brown (10YR 6/3) silt loam; weak medium subangular blocky structure; friable; few very fine roots; common fine faint light brownish gray (10YR 6/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; few fine iron-manganese concretions; very strongly acid; clear smooth boundary.

Bx1—21 to 27 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; firm; few very fine roots; common prominent white (10YR 8/1) (dry) clay depletions on faces of peds; common fine faint light brownish gray (10YR 6/2) iron depletions and common medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine iron-manganese concretions; brittle; very strongly acid; clear smooth boundary.

Bx2—27 to 38 inches; brown (10YR 5/3) silt loam; moderate medium prismatic structure parting to weak medium subangular blocky; firm; few very fine roots; common prominent white (10YR 8/1) (dry) clay depletions on faces of peds; common medium faint light brownish gray (10YR 6/2) iron depletions and common medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common fine iron-manganese concretions; brittle; very strongly acid; clear smooth boundary.

BCg—38 to 55 inches; light brownish gray (10YR 6/2) silt loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct white (10YR 8/1) (dry) clay depletions on faces of peds; common medium distinct yellowish brown (10YR 5/4) masses of iron in the matrix; common medium iron-manganese concretions; very strongly acid; gradual smooth boundary.

Cg—55 to 77 inches; variegated 50 percent light brownish gray (10YR 6/2) and 40 percent yellowish brown (10YR 5/4) silt loam; massive; friable; common fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; many fine iron-manganese concretions; slightly acid.

Range in Characteristics

Depth to the base of soil development: 30 to more than 80 inches
Depth to the Bx horizon: 15 to 36 inches
Texture of the particle-size control section: Averages between 12 and 18 percent clay and less than 15 percent sand
Reaction in the control section: Very strongly acid or strongly acid

Ap or A horizon:
Hue—10YR
Value—3 to 5 (6 or 7 dry)
Chroma—2 or 3
Texture—silt loam

E or Eg horizon:
Hue—10YR
Value—4 to 6 (6 to 8 dry)
Chroma—2 or 3
Texture—silt loam

Bg or Bw horizon:
Hue—10YR
Value—5 or 6
Chroma—2 or 3
Texture—silt loam

Bx horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 to 4
Texture—silt loam or silt

C or Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam

8787A—Banlic silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood-plain steps and low stream terraces (fig. 2)

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Acid, silty alluvium
Flooding frequency: Occasional

Map Unit Composition

Banlic and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a thinner subsoil than that of the Banlic soil
- Soils that contain more sand in the lower horizons than the Banlic soil
- Soils that contain more clay in the subsoil than the Banlic soil

Dissimilar soils:
- The poorly drained Birds soils in the lower landform positions
- The moderately well drained Wilbur soils, which do not have a firm, brittle horizon

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Beaucoup Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls

Figure 2.—This crop of wheat is in an area of Banlic silt loam, 0 to 2 percent slopes, occasionally flooded. The house on the side slope is in an area of Bunkum silty clay loam.

Typical Pedon for MLRA 115B

Beaucoup silty clay loam, in a nearly level area in a cultivated field, at an elevation of about 395 feet above mean sea level; about 6 miles northwest of Valmeyer, in Monroe County, Illinois; approximately 2,180 feet west and 2,080 feet south of the northeast corner of sec. 17, T. 2 S., R. 11 W.; USGS Valmeyer, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 21 minutes 48 seconds N. and long. 90 degrees 20 minutes 22 seconds W., NAD 27:

Ap—0 to 11 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine and fine roots throughout; few fine rounded black (N 2.5/0) iron-manganese nodules; neutral; abrupt smooth boundary.

AB—11 to 16 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine angular blocky structure; friable; common very fine and fine roots throughout; common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine irregular brown (7.5YR 4/4) masses of iron-manganese accumulation and few fine rounded black (N 2.5/0) iron-manganese nodules; neutral; clear smooth boundary.

Btg1—16 to 24 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate medium prismatic structure parting to moderate fine angular blocky; friable; few very fine and fine roots along faces of peds; common distinct very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; common fine prominent reddish brown (5YR 4/4) masses of iron accumulation in the matrix; few fine irregular yellowish red (5YR 4/6) masses of iron-manganese accumulation and few fine rounded black (N 2.5/0) iron-manganese nodules; slightly alkaline; clear smooth boundary.

Btg2—24 to 35 inches; dark grayish brown (2.5Y 4/2)

silty clay loam; moderate medium prismatic structure parting to moderate fine angular blocky; friable; few very fine roots along faces of peds; many distinct very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; thin band of dark grayish brown (2.5Y 4/2) silt coatings, light brownish gray (2.5Y 6/2) dry, at a depth of 32 inches; common fine prominent dark red (2.5YR 3/6) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation and few fine rounded black (N 2.5/0) iron-manganese nodules; slightly alkaline; clear smooth boundary.

Btg3—35 to 46 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots along faces of peds; few very fine and fine tubular pores; many distinct very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; common medium prominent brown (7.5YR 4/4) and few fine prominent dark red (2.5YR 3/6) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 5/6) and black (N 2.5/0) masses of iron-manganese accumulation; slightly alkaline; clear smooth boundary.

Btg4—46 to 64 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; friable; few very fine roots along faces of peds; common very fine and fine tubular pores; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) and few medium prominent reddish brown (5YR 4/3) masses of iron accumulation in the matrix; few medium irregular black (N 2.5/0) masses of iron-manganese accumulation; slightly alkaline; clear smooth boundary.

Cg—64 to 80 inches; stratified, dark grayish brown (2.5Y 4/2) silty clay loam and silt loam; massive; friable; few fine tubular pores; common fine distinct gray (10YR 5/1) iron depletions and common medium distinct brown (10YR 4/3) masses of iron accumulation in the matrix; common medium irregular black (N 2.5/0) masses of iron-manganese accumulation; slightly alkaline.

Range in Characteristics

Depth to the base of soil development: 35 to 65 inches
Thickness of the mollic epipedon: 10 to 24 inches; the mollic epipedon extends into the upper part of the B horizon in some pedons
Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 15 percent fine sand or coarser
Reaction: Moderately acid to slightly alkaline
Depth to carbonates (if they occur): More than 40 inches
Other features: Some pedons have a BCg horizon.

Ap or A horizon:
Hue—10YR or N
Value—2 or 3 (4 or 5 dry)
Chroma—0 to 2
Texture—silty clay loam or silt loam

Bg or Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—stratified silty clay loam, silt loam, loam, sandy loam, fine sandy loam, or very fine sandy loam

8070A—Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Alluvium of silty clay loam
Flooding frequency: Occasional

Map Unit Composition

Beaucoup and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain more clay in the upper part than the Beaucoup soil
- Soils that contain more sand in the substratum than the Beaucoup soil
- Soils that contain carbonates in the subsoil

Dissimilar soils:
- The somewhat poorly drained Tice soils in the higher landform positions
- Very poorly drained soils in undrained depressions that are ponded during the growing season

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Bethalto Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon for MLRA 115B

Bethalto silt loam, in a gently sloping area in a cultivated field, at an elevation of about 500 feet above mean sea level; about 2.5 miles northeast of Troy, in Madison County, Illinois; approximately 1,060 feet north and 500 feet west of the center of sec. 35, T. 4 N., R. 7 W.; USGS Marine, Illinois, topographic quadrangle; lat. 38 degrees 45 minutes 15 seconds N. and long. 89 degrees 50 minutes 50 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine roots; common fine tubular pores; few fine rounded black (10YR 2/1) and strong brown (7.5YR 5/6) iron-manganese nodules with sharp boundaries; about 21 percent clay; neutral; abrupt smooth boundary.

Eg1—8 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium platy structure parting to weak fine granular; friable; few very fine roots; few fine tubular pores; common distinct gray (10YR 6/1) (dry) clay depletions along pores; few fine faint brown (10YR 4/3) masses of iron accumulation in the matrix; few fine rounded black (10YR 2/1) and strong brown (7.5YR 5/6) iron-manganese nodules with sharp boundaries; about 19 percent clay; neutral; clear smooth boundary.

Eg2—11 to 15 inches; grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak medium granular; friable; few very fine roots; few fine tubular pores; many distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds and along pores; few fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common fine rounded black (10YR 2/1) and strong brown (7.5YR 5/6) iron-manganese nodules with sharp boundaries; about 18 percent clay; slightly acid; clear smooth boundary.

Bt—15 to 24 inches; brown (10YR 4/3) silty clay loam; moderate fine prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine roots; few fine tubular pores; few distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds and along pores; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint light brownish gray (10YR 6/2) iron depletions and few fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear boundaries; about 32 percent clay; moderately acid; clear smooth boundary.

Btg1—24 to 36 inches; grayish brown (10YR 5/2) silty clay loam; weak fine prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine roots; few very fine tubular pores; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine rounded black (7.5YR 2.5/1) iron-manganese nodules with clear boundaries; about 31 percent clay; moderately acid; gradual smooth boundary.

Btg2—36 to 48 inches; grayish brown (10YR 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; few very fine tubular pores; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds and lining pores; many medium and coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine and medium irregular very dark brown (7.5YR 2.5/2) and strong brown (7.5YR 4/6) iron-manganese nodules with clear boundaries; about 30 percent clay; slightly acid; gradual smooth boundary.

Btg3—48 to 62 inches; grayish brown (10YR 5/2) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few very fine tubular pores; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds and lining pores; many medium and coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine and medium irregular very dark brown (7.5YR 2.5/2) and strong brown (7.5YR 4/6) iron-manganese nodules with clear boundaries; about 28 percent clay; slightly acid; clear smooth boundary.

BCtg—62 to 70 inches; light brownish gray (10YR 6/2) silt loam; weak coarse angular blocky structure; friable; few fine vesicular pores; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; few prominent very dark grayish brown (10YR 3/2) organo-clay films lining root channels and filling pores; common medium and coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine and medium irregular very dark brown (7.5YR 2.5/2) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; about 26 percent clay; slightly acid; gradual smooth boundary.

Cg—70 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; few fine vesicular pores; few distinct dark grayish brown (10YR 4/2) clay films lining root channels and filling pores; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 23 percent clay; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 42 to 80 inches

Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand

Depth to carbonates (if they occur): More than 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 or 2
Texture—silt loam

Eg or E horizon:
Hue—10YR
Value—4 to 6 (6 or 7 dry)
Chroma—1 to 3
Texture—silt loam

BE or EB horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—1 to 3
Texture—silt loam or silty clay loam

Bt or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—typically silty clay loam; silt loam in the lower part in some pedons

BCt or BCtg horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or silty clay loam

C or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam

90A—Bethalto silt loam, 0 to 2 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Summits

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Bethalto and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thicker dark surface layer than that of the Bethalto soil
- Soils that contain more clay in the subsoil than the Bethalto soil

Dissimilar soils:
- The poorly drained Virden and similar soils in small depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Birds Series

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Typic Fluvaquents

Typical Pedon for MLRA 114 and MLRA 115B

Birds silt loam, in a nearly level area in a cultivated field, at an elevation of about 445 feet above mean sea level; about 3 miles southeast of Troy, in Madison County, Illinois; approximately 80 feet north and 2,000 feet west of the center of sec. 24, T. 3 N., R. 7 W.; USGS St. Jacob, Illinois, topographic quadrangle; lat. 38 degrees 41 minutes 37 seconds N. and long. 89 degrees 50 minutes 05 seconds W., NAD 27:

Ap—0 to 8 inches; dark gray (10YR 4/1) silt loam, light brownish gray (10YR 6/2) dry; weak medium subangular blocky structure parting to moderate medium granular; friable; common very fine roots; thin lenses of gray (10YR 6/1) silt grains along faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Cg1—8 to 13 inches; gray (5Y 5/1) silt loam; massive with weak thick platy stratification planes; friable; few very fine roots; few very fine and fine continuous tubular pores; common medium prominent dark reddish brown (5YR 3/3) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Cg2—13 to 19 inches; stratified, very dark gray (5Y 3/1) and dark gray (5Y 4/1) silt loam and silty clay loam; massive; firm; few very fine roots; common very fine and fine continuous tubular pores; common medium prominent dark reddish brown (5YR 3/4) masses of iron accumulation in the matrix; few medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; slightly acid; abrupt smooth boundary.

Cg3—19 to 39 inches; gray (5Y 6/1) silt loam; massive; friable; few very fine roots; few very fine continuous tubular pores; many medium prominent yellowish red (5YR 4/6) and yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; moderately acid; clear smooth boundary.

Cg4—39 to 63 inches; variegated light brownish gray (2.5Y 6/2) and light gray (10YR 7/1) silt loam; massive; friable; few very fine roots; few very fine continuous tubular pores; many medium prominent yellowish brown (10YR 5/8) and few medium prominent yellowish red (5YR 4/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) iron-manganese nodules with clear boundaries; strongly acid; gradual smooth boundary.

Cg5—63 to 78 inches; grayish brown (2.5Y 5/2), stratified silt loam and silty clay loam; massive; friable; few very fine roots; few very fine continuous tubular pores; common fine distinct light gray (10YR 7/1) iron depletions and few medium prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine and medium irregular black (10YR 2/1) iron-manganese nodules with clear yellowish red (5YR 4/6) boundaries; moderately acid; clear smooth boundary.

2Btgb—78 to 90 inches; dark gray (2.5Y 4/1) silty clay loam; moderate fine prismatic structure parting to weak fine and medium angular blocky; firm; few very fine and fine vesicular and tubular pores; common distinct very dark gray (2.5Y 3/1) organo-clay films on vertical faces of peds and few prominent dark reddish brown (5YR 2.5/2) iron-manganese coatings lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (5YR 2.5/1) iron-manganese nodules with clear yellowish red (5YR 4/6) boundaries; slightly acid.

Range in Characteristics

Texture of the particle-size control section: Averages between 18 and 27 percent clay and less than 15 percent fine sand or coarser sand

Reaction: Typically moderately acid to slightly alkaline to a depth of more than 40 inches; strongly acid in subhorizons of some pedons

Depth to a buried soil (if it occurs): More than 40 inches

Ap, A, or ACg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6 (6 or 7 dry)
Chroma—1 or 2
Texture—silt loam

Cg horizon (to a depth of 40 inches):
Hue—10YR, 2.5Y, or 5Y
Value—3 to 7
Chroma—1 or 2
Texture—silt loam; thin strata of silty clay loam in some pedons

Cg horizon (below a depth of 40 inches):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 or 2

Texture—dominantly silt loam; strata of silty clay loam, clay loam, loam, or sandy loam in some pedons

3334L—Birds silt loam, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Silty alluvium
Flooding frequency: Frequent

Map Unit Composition

Birds and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
• Soils that have a dark buried soil within a depth of 40 inches
• Soils that are more acid than the Birds soil
• Soils that contain more clay throughout than the Birds soil

Dissimilar soils:
• The moderately well drained Wilbur soils in the higher areas on the flood plain
• Wet soils in depressional areas that are ponded during most of the growing season

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Blake Series

Taxonomic classification: Fine-silty, mixed, superactive, calcareous, mesic Aquic Udifluvents

Typical Pedon for MLRA 115B

Blake silty clay loam, in a cultivated field, at an elevation of about 365 feet above mean sea level; about 1 mile south of Rockwood, in Randolph County, Illinois; approximately 3,295 feet south and 897 feet west of the northeast corner of sec. 18, T. 8 S., R. 5 W.; USGS Rockwood, Illinois-Missouri, topographic quadrangle; lat. 37 degrees 49 minutes 50 seconds N. and long. 89 degrees 41 minutes 40 seconds W., NAD 27:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine granular structure in the upper part and moderate fine subangular blocky structure in the lower part; firm; slightly alkaline; clear smooth boundary.

C1—6 to 15 inches; stratified very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; massive with thin bedding planes; firm; few fine faint grayish brown 10YR 5/2) iron depletions in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

C2—15 to 20 inches; stratified dark grayish brown (10YR 4/2) silty clay loam and brown (10YR 5/3) silt loam; massive with moderately thick bedding planes; firm; very dark gray (10YR 3/1) faces of peds and wormcasts; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline; abrupt smooth boundary.

C3—20 to 33 inches; stratified brown (10YR 4/3) silt loam and very dark grayish brown (10YR 3/2) silty clay loam; massive; friable; many fine pores; common wormcasts; common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline; abrupt smooth boundary.

C4—33 to 60 inches; stratified, brown (10YR 5/3) and dark grayish brown (10YR 4/2) silt loam, loam, and very fine sandy loam; massive; very friable; many medium and coarse faint pale brown (10YR 6/3) masses of iron accumulation in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: Less than 10 inches
Carbonates: Carbonates are typically throughout the series control section, but the Ap or A horizon is noncalcareous in some pedons.

Ap or A horizon:
Hue—10YR or 2.5Y
Value—3 or 4 (5 or 6 dry)
Chroma—1 or 2
Texture—silty clay loam or silt loam

C horizon (upper part):
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—1 to 4

Texture—silty clay loam or silt loam; individual strata range from very fine sandy loam to silty clay

C horizon (lower part):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 or 3
Texture—silt loam, loam, or very fine sandy loam; as much as 12 inches of loamy very fine sand below a depth of 40 inches in some pedons; very thin darkened layers in some pedons; thin discontinuous strata of finer textured material in some pedons

3391A—Blake silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Stratified, calcareous, silty recent alluvium
Flooding frequency: Frequent

Map Unit Composition

Blake and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that do not contain carbonates in the upper part of the substratum
- Soils that contain less clay in the surface layer than the Blake soil
- Soils that contain more sand in the substratum than the Blake soil

Dissimilar soils:
- The moderately well drained Haynie soils on natural levees
- The very poorly drained, loamy Fluvaquents in depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Booker Series

Taxonomic classification: Very fine, smectitic, mesic Vertic Endoaquolls
Taxadjunct features: The Booker soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of these soils.

Typical Pedon for MLRA 115B

Booker clay, in a slightly depressional area on a flood plain, in a cultivated field, at an elevation of about 380 feet above mean sea level; about 3 miles southeast of Fults, in Monroe County, Illinois; approximately 5,100 feet southeast (along the railroad tracks) of the intersection of Kaskaskia Road and railroad tracks and 2,100 feet southwest of the railroad tracks; in S. 346, T. 5 S., R. 10 W.; USGS Bloomsdale, Missouri-Illinois, topographic quadrangle; lat. 38 degrees 09 minutes 10 seconds N. and long. 90 degrees 06 minutes 30 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) clay, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; very firm; common medium roots; 66 percent clay; neutral; abrupt smooth boundary.
A—8 to 13 inches; very dark gray (10YR 3/1) clay, dark gray (10YR 4/1) dry; weak medium prismatic structure parting to moderate fine angular blocky; very firm; common fine roots; common distinct very dark gray (5Y 3/1) slickensides; 69 percent clay; neutral; clear smooth boundary.
Bg1—13 to 21 inches; olive gray (5Y 4/2) clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; common very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; many distinct dark gray (5Y 4/1) slickensides; few fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; 75 percent clay; neutral; gradual smooth boundary.
Bg2—21 to 31 inches; gray (5Y 5/1) clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; common very fine roots; many distinct dark gray (5Y 4/1) slickensides; few medium prominent yellowish red (5YR 4/6) masses of iron accumulation in the matrix; 76 percent clay; neutral; gradual smooth boundary.
Bg3—31 to 43 inches; gray (5Y 5/1) clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few very fine roots; common distinct dark gray (5Y 4/1)

slickensides; common medium prominent yellowish red (5YR 4/6) masses of iron accumulation in the matrix; 66 percent clay; neutral; gradual smooth boundary.

Bg4—43 to 52 inches; dark grayish brown (2.5Y 4/2) clay; moderate medium prismatic structure parting to moderate coarse angular blocky; very firm; few very fine roots; common distinct dark gray (5Y 4/1) slickensides; common medium prominent brown (7.5YR 4/4) and few fine prominent yellowish red (5YR 4/6) masses of iron accumulation in the matrix; 76 percent clay; neutral; gradual smooth boundary.

BCg—52 to 60 inches; olive gray (5Y 4/2) clay; weak medium prismatic structure; very firm; few very fine roots; few distinct dark gray (5Y 4/1) slickensides; few medium prominent brown (7.5YR 4/4) and dark red (2.5YR 3/6) masses of iron accumulation in the matrix; 73 percent clay; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Texture of the particle-size control section: Averages 60 to about 75 percent clay
Reaction: Moderately acid to neutral

Ap horizon and A or AB horizon (if it occurs):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3 (4 or 5 dry)
Chroma—0 to 2
Texture—clay, silty clay, or silty clay loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 4 in the upper part; 4 or 5 in the lower part
Chroma—0 to 2
Texture—clay; thin horizons of coarser textured material in some pedons

Cg horizon (if it occurs):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—clay or silty clay

1457A—Booker clay, undrained, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains
Position on the landform: Closed depressions

Soil Properties and Qualities

Drainage class: Very poorly drained
Dominant parent material: Slackwater sediments
Flooding frequency: Occasional

Map Unit Composition

Booker and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain more sand and less clay in the lower part than the Booker soil
- Soils that contain carbonates in the lower part
- Soils that have a thin layer of silty overwash

Dissimilar soils:
- The poorly drained Fults soils in the higher areas on the flood plain near the edge of the mapped areas

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

8457L—Booker clay, 0 to 2 percent slopes, occasionally flooded, long duration

Setting

Landform: Flood plains
Position on the landform: Depressional areas

Soil Properties and Qualities

Drainage class: Very poorly drained
Dominant parent material: Slackwater sediments
Flooding frequency: Occasional

Map Unit Composition

Booker and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner dark surface layer than that of the Booker soil
- Soils that contain more sand and less clay in the lower part than the Booker soil

• Soils that contain more silt and less clay throughout than the Booker soil

Dissimilar soils:
• Soils that have less than 20 inches of silty overwash; near streams
• The somewhat poorly drained Nameoki soils in the higher landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Bunkum Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon for MLRA 114

Bunkum silty clay loam, on a slope of 9 percent, on a west-facing, severely eroded backslope in a cultivated field, at an elevation of about 510 feet above mean sea level; about 1 mile west of Smithton, in St. Clair County, Illinois; approximately 1,740 feet south and 160 feet east of the center of sec. 29, T. 1 S., R. 8 W.; USGS Millstadt, Illinois, topographic quadrangle; lat. 38 degrees 24 minutes 47 seconds N. and long. 90 degrees 00 minutes 37 seconds W., NAD 27:

Ap—0 to 8 inches; mixed brown (10YR 4/3) and yellowish brown (10YR 5/4) silty clay loam, pale brown (10YR 6/3) dry; moderate very fine subangular blocky structure; friable; many very fine roots; common fine and medium constricted tubular pores; common fine rounded black (7.5YR 2.5/1) iron-manganese nodules with sharp boundaries; about 30 percent clay; neutral; abrupt smooth boundary.

Bt1—8 to 16 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common very fine roots; few fine constricted tubular pores; common distinct brown (10YR 5/3) clay films on faces of peds; few fine distinct light brownish gray (10YR 6/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with sharp boundaries; about 34 percent clay; slightly acid; clear smooth boundary.

Bt2—16 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; weak fine prismatic structure parting to weak fine and medium subangular blocky; firm; common very fine roots; few very fine constricted tubular pores; common distinct brown (10YR 4/3) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium and coarse irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation with clear strong brown (7.5YR 4/6) boundaries; about 31 percent clay; slightly acid; clear smooth boundary.

Btg1—26 to 32 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; few fine and medium constricted tubular pores; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct light olive brown (2.5Y 5/4) and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few medium and coarse irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation with clear strong brown (7.5YR 4/6) boundaries; about 28 percent clay; moderately acid; clear smooth boundary.

Btg2—32 to 40 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse angular blocky structure; friable; few very fine roots; few fine and medium constricted tubular pores; few prominent dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation with clear strong brown (7.5YR 4/6) boundaries; about 26 percent clay; moderately acid; gradual smooth boundary.

CBg—40 to 58 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; few very fine roots; few fine and medium constricted tubular pores; few prominent dark grayish brown (10YR 4/2) clay films on vertical cleavage planes; few medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine and medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation with diffuse strong brown (7.5YR 4/6) boundaries; about 21

percent clay; slightly acid; abrupt smooth boundary.

2CB—58 to 80 inches; brown (7.5YR 5/4) silt loam; massive; friable; few fine and medium constricted tubular pores; few fine distinct pinkish gray (7.5YR 6/2) iron depletions in the matrix; few medium rounded very dark brown (7.5YR 2.5/3) iron-manganese concretions with clear strong brown (7.5YR 4/6) boundaries; about 25 percent clay and 8 percent sand; slightly acid.

Range in Characteristics

Depth to the base of the argillic horizon: 24 to 60 inches
Thickness of the loess: Typically 24 to about 60 inches
Texture of the particle-size control section: Averages between 25 and 35 percent clay and less than 7 percent sand
Other features: Some pedons have buried horizons below the C or 2C horizon. These buried horizons are silty clay loam, clay loam, silty clay, or clay.

Ap horizon and A and E horizons (if they occur):
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 to 4
Texture—silt loam or silty clay loam

Bt and Btg horizons:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam or silt loam

BCg or CBg horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam

2CB or 2C horizon (if it occurs):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

515C3—Bunkum silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Slopes along upland drainageways

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Bunkum and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
• Soils that have a thinner mantle of loess than that of the Bunkum soil
• Soils that contain a concentration of exchangeable sodium in the subsoil
• Areas of soils that are less eroded than the Bunkum soil
• Areas of soils that are more sloping or less sloping than the Bunkum soil

Dissimilar soils:
• The somewhat poorly drained Wakeland soils on narrow flood plains
• The moderately well drained Homen soils on summits and shoulders

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

515D3—Bunkum silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Slopes along upland drainageways

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Bunkum and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
• Soils that have a thinner mantle of loess than that of the Bunkum soil
• Soils that contain a concentration of exchangeable sodium in the subsoil
• Areas of soils that are less eroded than the Bunkum soil
• Areas of soils that are more sloping or less sloping than the Bunkum soil

Dissimilar soils:
• The somewhat poorly drained Wakeland soils on narrow flood plains
• The moderately well drained Homen soils on summits and shoulders

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

884B2—Bunkum-Coulterville silt loams, 2 to 5 percent slopes, eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Slopes along upland drainageways

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Bunkum and similar soils: 50 percent
Coulterville and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a thicker mantle of loess than that of the Bunkum and Coulterville soils
• Areas of soils that are more eroded or less eroded than the Bunkum and Coulterville soils
• Areas of soils that are more sloping or less sloping than the Bunkum and Coulterville soils

Dissimilar soils:
• The somewhat poorly drained Wakeland soils on narrow flood plains
• The moderately well drained Homen soils on summits and shoulders

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

884C3—Bunkum-Coulterville silty clay loams, 5 to 10 percent slopes, severely eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Slopes along upland drainageways

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Bunkum and similar soils: 50 percent
Coulterville and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a thinner mantle of loess than that of the Bunkum and Coulterville soils
• Areas of soils that are less eroded than the Bunkum and Coulterville soils
• Areas of soils that are more sloping or less sloping than the Bunkum and Coulterville soils

Dissimilar soils:
• The somewhat poorly drained Wakeland soils on narrow flood plains
• The moderately well drained Homen soils on summits and shoulders

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

897D3—Bunkum-Atlas silty clay loams, 10 to 18 percent slopes, severely eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Slopes along upland drainageways

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Bunkum—loess and the underlying silty pedisediment; Atlas—glacial till that contains a strongly developed paleosol
Flooding: None

Map Unit Composition

Bunkum and similar soils: 50 percent
Atlas and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain a concentration of exchangeable sodium in the subsoil
- Areas of soils that are less eroded than the Bunkum and Atlas soils
- Areas of soils that are more sloping or less sloping than the Bunkum and Atlas soils

Dissimilar soils:
- The somewhat poorly drained Wakeland soils on narrow flood plains
- The moderately well drained Homen soils on summits and shoulders

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Burksville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Epiaqualfs

Typical Pedon for MLRA 114

Burksville silt loam, in a nearly level area in a cultivated field, at an elevation of about 450 feet above mean sea level; about 1 mile south of Hecker, in Monroe County, Illinois; approximately 900 feet south and 1,650 feet east of the northwest corner of sec. 9, T. 3 S., R. 8 W.; USGS New Athens West, Illinois, topographic quadrangle; lat. 38 degrees 17 minutes 32 seconds N. and long. 89 degrees 59 minutes 35 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; many very fine roots; common fine irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation and few medium rounded black (7.5YR 2.5/1) iron-manganese nodules; neutral; abrupt smooth boundary.

Eg—7 to 13 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium platy structure parting to weak fine granular; friable; common very fine roots; common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common fine irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation and few medium rounded black (7.5YR 2.5/1) iron-manganese nodules; neutral; clear smooth boundary.

Btng1—13 to 22 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; common very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine and medium prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common fine and medium irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; slightly alkaline; clear smooth boundary.

Btng2—22 to 36 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium subangular blocky structure; firm; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common fine and medium irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation and few medium rounded black (7.5YR 2.5/1) iron-

manganese nodules; few coarse irregular light gray (10YR 7/1) carbonate concretions; moderately alkaline; gradual smooth boundary.

Btng3—36 to 54 inches; gray (2.5Y 5/1) silty clay loam; weak medium subangular blocky structure; firm; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few medium prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common fine and medium irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; slightly alkaline; clear smooth boundary.

Cg—54 to 80 inches; gray (2.5Y 6/1) silt loam; massive; friable; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium irregular black (10YR 2/1) masses of iron-manganese accumulation; neutral.

Range in Characteristics

Depth to the base of soil development: 35 to 70 inches
Thickness of the loess: 80 inches or more
Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand
Depth to carbonates: Some pedons contain carbonates in the middle and lower parts of the argillic horizon and in horizons or strata below the argillic horizon.
Other features: Some pedons have a BCg horizon.

Ap or A horizon:
Hue—10YR
Value—3 or 4 (6 or 7 dry)
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR
Value—4 to 6 (6 to 8 dry)
Chroma—1 or 2
Texture—silt loam

Btng horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—dominantly silty clay loam; silt loam in some subhorizons

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 or 2
Texture—silt loam or silty clay loam

657A—Burksville silt loam, 0 to 2 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Broad interfluves and nearly level summits

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Burksville and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
• Soils that have a darker surface layer than that of the Burksville soil
• Soils that contain more clay in the subsoil than the Burksville soil
• Soils that are more acid and contain less exchangeable sodium in the subsoil than the Burksville soil

Dissimilar soils:
• The somewhat poorly drained Coulterville soils in the more sloping landform positions
• The poorly drained Pierron soils intermingled with the Burksville soils

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Caseyville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon for MLRA 115B

Caseyville silt loam, in a nearly level area in a cultivated field, at an elevation of about 580 feet above mean sea level; about 3 miles northwest of Millstadt, in St. Clair County, Illinois; approximately 105 feet south and 180 feet west of the northeast corner of sec. 32, T.

1 N., R. 9 W.; USGS Millstadt, Illinois, topographic quadrangle; lat. 38 degrees 29 minutes 53 seconds N. and long. 90 degrees 06 minutes 40 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; many very fine and few fine roots; few fine rounded black (7.5YR 2.5/1) iron-manganese nodules with sharp boundaries; about 21 percent clay; neutral; clear smooth boundary.

Eg—7 to 12 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common very fine and few fine roots; few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with sharp boundaries; about 20 percent clay; moderately acid; clear smooth boundary.

BE—12 to 16 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; common very fine roots; common distinct very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with sharp boundaries; about 28 percent clay; moderately acid; clear smooth boundary.

Bt1—16 to 23 inches; brown (10YR 4/3) silty clay loam; strong medium angular blocky structure; firm; common very fine roots; few distinct very pale brown (10YR 8/2) (dry) clay depletions on faces of peds in the upper part; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine rounded black (N 2.5/0) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; about 32 percent clay; strongly acid; clear smooth boundary.

Bt2—23 to 36 inches; brown (10YR 5/3) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; firm; common very fine roots primarily along vertical faces of peds; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (N 2.5/0) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; about 31 percent clay; strongly acid; gradual smooth boundary.

Bt3—36 to 54 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots primarily along vertical faces of peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint light brownish gray (10YR 6/2) iron depletions and common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium and coarse rounded black (N 2.5/0) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; about 30 percent clay; moderately acid; clear smooth boundary.

BCtg—54 to 62 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium prismatic structure; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (N 2.5/0) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; about 24 percent clay; slightly acid; gradual smooth boundary.

Cg—62 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; very few distinct dark grayish brown (10YR 4/2) clay films lining root channels; common fine and medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common medium and coarse irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation with diffuse strong brown (7.5YR 5/6) boundaries; about 20 percent clay; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 40 to 76 inches

Thickness of the loess: 80 inches or more

Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand

Depth to carbonates (if they occur): More than 60 inches

Other features: Pedons in undisturbed areas have an A horizon. This horizon is 2 to 5 inches thick and has value of 3 (5 dry). Some pedons have an EB horizon.

Ap horizon:

Hue—10YR

Value—4 to 6 (6 or 7 dry)

Chroma—1 or 2
Texture—silt loam

Eg or E horizon:
Hue—10YR
Value—4 to 6 (6 or 7 dry)
Chroma—1 to 3
Texture—silt loam

Bt horizon and BC horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—dominantly silty clay loam; silt loam in the lower part in some pedons

Cg or C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam

267A—Caseyville silt loam, 0 to 2 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Nearly level summits

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Caseyville and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Caseyville soil
- Soils that contain more clay in the subsoil than the Caseyville soil

Dissimilar soils:
- Poorly drained soils at the head of drainageways and in slight depressions
- The moderately well drained Winfield soils in the more sloping areas

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

267B—Caseyville silt loam, 2 to 5 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Gently sloping summits

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Caseyville and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Caseyville soil
- Soils that contain more clay in the subsoil than the Caseyville soil
- Soils that are moderately eroded; near the edge of the mapped areas

Dissimilar soils:
- Poorly drained soils at the head of drainageways and in slight depressions
- The moderately well drained Winfield soils in the more sloping areas

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Colp Series

Taxonomic classification: Fine, smectitic, mesic Aquertic Chromic Hapludalfs

Typical Pedon for MLRA 114

Colp silt loam, in a nearly level area in a cultivated field, at an elevation of about 420 feet above mean sea

level; about 4 miles south and 2 miles east of Hecker, in Monroe County, Illinois; approximately 1,095 feet east and 110 feet north of the center of sec. 27, T. 3 S., R. 8 W.; USGS Red Bud, Illinois, topographic quadrangle; lat. 38 degrees 14 minutes 38 seconds N. and long. 89 degrees 58 minutes 02 seconds W., NAD 27:

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common very fine roots; few fine continuous tubular pores; few fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; 21 percent clay; neutral; abrupt smooth boundary.

E—8 to 12 inches; light brownish gray (10YR 6/2) silt loam, very pale brown (10YR 8/2) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; few very fine roots; few very fine continuous tubular pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; 19 percent clay; moderately acid; abrupt smooth boundary.

2Bt1—12 to 17 inches; yellowish brown (10YR 5/4) silty clay; weak fine prismatic structure parting to moderate fine angular blocky; firm; few very fine roots; common prominent very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; many faint brown (10YR 5/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; 46 percent clay; very strongly acid; clear smooth boundary.

2Bt2—17 to 23 inches; yellowish brown (10YR 5/4) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few very fine roots; many faint brown (10YR 5/3) clay films on faces of peds; few fine distinct light brownish gray (10YR 6/2) iron depletions; common fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; 48 percent clay; very strongly acid; gradual smooth boundary.

2Bt3—23 to 30 inches; yellowish brown (10YR 5/4) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few very fine roots; common faint brown (10YR 5/3) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; 47 percent clay; very strongly acid; gradual smooth boundary.

2Bt4—30 to 37 inches; yellowish brown (10YR 5/4) clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few very fine roots; common faint brown (10YR 5/3) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded dark reddish brown (5YR 2.5/2) iron-manganese nodules with clear yellowish red (5YR 4/6) boundaries; 61 percent clay; very strongly acid; clear smooth boundary.

2Bt5—37 to 48 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few prominent black (N 2.5/0) iron-manganese coatings lining root channels; common medium faint light brownish gray (10YR 6/2) iron depletions and many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded dark reddish brown (5YR 2.5/2) iron-manganese nodules with clear yellowish red (5YR 4/6) boundaries; 37 percent clay; very strongly acid; abrupt smooth boundary.

2Btg1—48 to 55 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds and lining root channels; few prominent black (N 2.5/0) iron-manganese coatings lining root channels; common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (5YR 2.5/1) iron-manganese nodules with clear yellowish red (5YR 4/6) boundaries on vertical faces of peds; 36 percent clay; moderately acid; abrupt smooth boundary.

2Btg2—55 to 70 inches; light brownish gray (2.5Y 6/2) silty clay; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds and lining root channels; common fine and medium prominent strong brown (7.5YR 5/6) masses of iron

accumulation in the matrix; many fine and medium irregular black (5YR 2.5/1) iron-manganese nodules with clear yellowish red (5YR 4/6) boundaries on vertical faces of peds; 43 percent clay; moderately acid; clear smooth boundary.

2BCtkg—70 to 80 inches; grayish brown (2.5Y 5/2) silty clay; weak medium prismatic structure parting to moderate fine and medium angular blocky; very firm; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common prominent reddish brown (5YR 4/4) iron-manganese coatings lining channels and pores; few fine and medium irregular black (5YR 2.5/1) iron-manganese nodules with clear yellowish red (5YR 4/6) boundaries; common fine and medium irregular white (10YR 8/1) carbonate nodules with sharp boundaries; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to the base of the argillic horizon: 50 to more than 80 inches

Thickness of the loess or other silty material: 0 to 20 inches

Texture of the particle-size control section: Averages between 35 and 50 percent clay and less than 15 percent sand; some subhorizons contain 50 to about 60 percent clay

Depth to carbonates: Carbonates are typically in the C horizon; they occur in the lower part of the argillic horizon in some pedons.

Other features: Some pedons have a thin BE or Bt horizon of silt loam or silty clay loam. This horizon formed in the upper silty material.

Ap or A horizon:

Hue—10YR
Value—4 or 5 (6 or 7 dry); 3 (5 dry) in some thin A horizons
Chroma—1 to 4
Texture—silt loam; silty clay loam in some pedons in eroded areas

E horizon (if it occurs):

Hue—10YR
Value—5 or 6 (6 to 8 dry)
Chroma—2 to 4
Texture—silt loam

2Bt horizon:

Hue—10YR, 7.5YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam or silty clay; some subhorizons are clay, and some pedons contain thin strata of silt loam, loam, or fine sandy loam in the lower part

2Btg horizon and 2BCg horizon (if it occurs):

Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay; some subhorizons are clay, and some pedons contain thin strata of silt loam, loam, or fine sandy loam in the lower part

2C or 2Cg horizon (if it occurs):

Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 8
Texture—silty clay loam or silty clay; stratified with silt loam or fine sandy loam in some pedons

8122B—Colp silt loam, 2 to 5 percent slopes, occasionally flooded

Setting

Landform: Lake plains
Position on the landform: Treads

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Clayey lacustrine sediments
Flooding frequency: Occasional

Map Unit Composition

Colp and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Colp soil
- Soils that are moderately eroded; near the edge of the mapped areas
- Areas of soils that are more sloping or less sloping than the Colp soil

Dissimilar soils:
- The poorly drained Okaw soils in the lower landform positions
- The somewhat poorly drained Hurst soils in the lower landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

8122C—Colp silty clay loam, 5 to 10 percent slopes, severely eroded, occasionally flooded

Setting

Landform: Lake plains
Position on the landform: Risers

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Clayey lacustrine sediments
Flooding frequency: Occasional

Map Unit Composition

Colp and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Colp soil
- Areas of soils that are less eroded than the Colp soil
- Areas of soils that are more sloping or less sloping than the Colp soil

Dissimilar soils:
- The poorly drained Okaw soils in the lower landform positions
- The somewhat poorly drained Hurst soils in the lower landform positions
- The moderately well drained Redbud soils in the higher landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Coulterville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Epiaqualfs

Typical Pedon for MLRA 114

Coulterville silt loam, in an eroded area on a southeast-facing, concave slope of 3 percent, in a cultivated field; at an elevation of about 467 feet above mean sea level; about 0.5 mile southwest of Hecker, in Monroe County, Illinois; approximately 1,320 feet west and 2,100 feet north of the southeast corner of sec. 5, T. 3 S., R. 8 W.; USGS Paderborn, Illinois, topographic quadrangle; lat. 38 degrees 18 minutes 02 seconds N. and long. 90 degrees 00 minutes 11 seconds W., NAD 27:

Ap—0 to 7 inches; mixed dark grayish brown (10YR 4/2) and brown (10YR 4/3) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine and few fine roots; few fine rounded yellowish red (5YR 5/8) masses of iron-manganese accumulation and common fine rounded very dark gray (7.5YR 3/1) iron-manganese nodules; 2 percent exchangeable sodium; 19 percent clay; moderately acid; abrupt smooth boundary.

Btn—7 to 11 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common very fine and few fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; few fine rounded yellowish red (5YR 5/8) masses of iron-manganese accumulation and few fine rounded very dark gray (7.5YR 3/1) iron-manganese nodules; 5 percent exchangeable sodium; 36 percent clay; neutral; clear smooth boundary.

Btng1—11 to 15 inches; gray (5Y 6/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine and few fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; few fine rounded yellowish red (5YR 5/8) masses of iron-manganese accumulation and common fine rounded very dark gray (7.5YR 3/1) iron-manganese nodules; 9 percent exchangeable sodium; 32 percent clay; neutral; clear smooth boundary.

Btng2—15 to 23 inches; gray (5Y 6/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common faint light gray (10YR 7/1)

(dry) clay depletions on faces of peds, common distinct grayish brown (10YR 5/2) clay films on faces of peds, and few distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels; common medium prominent brown (7.5YR 4/4) masses of iron accumulation in the matrix; common fine and medium rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation and common fine rounded black (10YR 2/1) iron-manganese nodules; very dark grayish brown (10YR 3/2) vertical krotovinas; 12 percent exchangeable sodium; 29 percent clay; slightly effervescent throughout; moderately alkaline; clear smooth boundary.

Btkng1—23 to 28 inches; gray (5Y 5/1) silt loam; moderate medium subangular blocky structure; friable; few very fine roots; common faint light gray (10YR 7/1) (dry) clay depletions on faces of peds, few faint grayish brown (10YR 5/2) clay films on faces of peds, and few distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels; common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; common medium irregular strong brown (7.5YR 4/6) iron-manganese nodules and few medium irregular carbonate nodules; 14 percent exchangeable sodium; 24 percent clay; slightly effervescent; moderately alkaline; clear smooth boundary.

Btkng2—28 to 33 inches; light olive gray (5Y 6/2) silt loam; weak medium subangular blocky structure; friable; few very fine roots; common faint light gray (10YR 7/1) (dry) clay depletions on faces of peds, few faint grayish brown (10YR 5/2) clay films on faces of peds, and few prominent black (10YR 2/1) iron-manganese stains on faces of peds; common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; common fine and medium irregular dark brown (7.5YR 3/3) masses of iron-manganese accumulation and few medium irregular carbonate nodules; 10 percent exchangeable sodium; 24 percent clay; slightly effervescent; moderately alkaline; clear smooth boundary.

Btkn—33 to 39 inches; olive (5Y 5/3) silt loam; weak medium subangular blocky structure; friable; few faint grayish brown (10YR 5/2) clay films on faces of peds; common medium distinct light brownish gray (2.5Y 6/2) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many medium irregular dark brown (7.5YR 3/2) masses of iron-manganese accumulation and few medium irregular carbonate nodules; 8 percent exchangeable sodium; 21 percent clay; slightly effervescent; moderately alkaline; clear smooth boundary.

BCkn—39 to 56 inches; brown (10YR 5/3) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few prominent black (10YR 2/1) manganese stains on vertical faces of peds and in root channels; common prominent white (10YR 8/1) carbonate coatings on vertical faces of peds; common medium distinct light brownish gray (2.5Y 6/2) iron depletions and common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; common fine and medium irregular dark brown (7.5YR 3/2) masses of iron-manganese accumulation; 6 percent exchangeable sodium; 19 percent clay; slightly effervescent; moderately alkaline; clear smooth boundary.

Ckn—56 to 68 inches; brown (10YR 5/3) silt loam; massive; friable; few prominent white (10YR 8/1) carbonate coatings along faces of cleavage planes; common medium prominent strong brown (7.5YR 4/6) and common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules; 5 percent exchangeable sodium; 16 percent clay; slightly effervescent; moderately alkaline; gradual smooth boundary.

2C—68 to 80 inches; brown (7.5YR 5/4) silt loam; massive; friable; few fine tubular pores; common medium prominent light brownish gray (2.5Y 6/2) iron depletions and common fine distinct strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; few fine rounded dark brown (7.5YR 3/3) masses of iron-manganese accumulation; about 10 percent sand; slightly alkaline.

Range in Characteristics

Depth to the base of the argillic horizon: 35 to 70 inches

Thickness of the loess: 50 to more than 80 inches; some pedons in severely eroded areas have less than 50 inches of loess

Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand

Depth to carbonates: Carbonates, if they occur, are in the middle and lower parts of the argillic horizon and in strata below the argillic horizon.

Other features: Some pedons have a 2Bt or 2BC horizon. This horizon formed in silty erosional sediments that contain 5 to 30 percent sand. Some pedons have a C horizon that is underlain

by buried horizons of older soils. These buried horizons are commonly silt loam, loam, silty clay loam, or clay loam.

Ap or A horizon:
Hue—10YR
Value—3 or 4 (5 or 6 dry)
Chroma—2 or 3
Texture—silt loam; silty clay loam in some pedons in eroded areas

E horizon (if it occurs):
Hue—10YR
Value—4 to 6 (6 to 8 dry)
Chroma—2 or 3
Texture—silt loam

Btn, Btng, Btkng, or Btkn horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—dominantly silty clay loam; silt loam or silty clay in some subhorizons

BCkn, BCkng, BC, or BCg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 3
Texture—silt loam or silty clay loam

C, Ckn, Cg, 2Cg, or 2C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 4
Texture—silt loam, loam, or silty clay loam

878C3—Coulterville-Grantfork silty clay loams, 5 to 10 percent slopes, severely eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Erosional side slopes

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Coulterville—loess and the underlying silty pedisediment; Grantfork—loamy pedisediment and the underlying glacial till
Flooding: None

Map Unit Composition

Coulterville and similar soils: 50 percent
Grantfork and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a natric horizon
• Areas of soils that are less eroded than the Coulterville and Grantfork soils
• Areas of soils that are more sloping or less sloping than the Coulterville and Grantfork soils

Dissimilar soils:
• The somewhat poorly drained Wakeland soils on narrow flood plains
• The well drained Ursa soils on the steeper side slopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

880B2—Coulterville-Darmstadt silt loams, 2 to 5 percent slopes, eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Summits and the upper end of small drainageways

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Coulterville and similar soils: 50 percent
Darmstadt and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that do not have a concentration of exchangeable sodium in the subsoil
• Areas of soils that are severely eroded
• Areas of soils that are more sloping or less sloping than the Coulterville and Darmstadt soils

Dissimilar soils:
• The somewhat poorly drained Wakeland soils on narrow flood plains

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Cowden Series

Taxonomic classification: Fine, smectitic, mesic Mollic Albaqualfs

Typical Pedon for MLRA 114

Cowden silt loam, in a nearly level area in a cultivated field, at an elevation of about 665 feet above mean sea level; about 2 miles northwest of Butler, in Montgomery County, Illinois; approximately 1,980 feet west and 30 feet north of the southeast corner of sec. 8, T. 9 N., R. 4 W.; USGS Butler, Illinois, topographic quadrangle; lat. 39 degrees 13 minutes 55 seconds N. and long. 89 degrees 33 minutes 18 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; friable; common very fine and few fine roots; few fine continuous tubular pores; few fine irregular dark brown (10YR 3/3) masses of iron-manganese accumulation in the matrix; moderately acid; abrupt smooth boundary.

Eg1—8 to 14 inches; dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; weak medium platy structure parting to weak fine subangular blocky; friable; few very fine roots; common fine and medium tubular and vesicular pores; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds and filling pores; few fine irregular dark brown (10YR 3/3) masses of iron-manganese accumulation in the matrix; moderately acid; clear smooth boundary.

Eg2—14 to 19 inches; gray (10YR 5/1) silt loam, light gray (10YR 7/1) dry; weak medium platy structure parting to weak fine subangular blocky; friable; few very fine roots; common fine and medium continuous tubular pores; common fine faint grayish brown (10YR 5/2) masses of iron accumulation in the matrix; common fine irregular dark brown (10YR 3/3) masses of iron-manganese accumulation in the matrix; strongly acid; abrupt smooth boundary.

Btg1—19 to 26 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium prismatic structure parting to moderate medium angular and subangular blocky; firm; common very fine roots; few fine continuous tubular pores; common distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds in the upper 2 inches; many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine distinct yellowish brown (10YR 5/4) and few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) iron-manganese nodules with sharp boundaries throughout; strongly acid; clear smooth boundary.

Btg2—26 to 43 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium and coarse angular blocky; firm; few very fine roots; many prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) and dark reddish brown (5YR 3/4) iron-manganese nodules with sharp boundaries throughout; moderately acid; gradual smooth boundary.

Btg3—43 to 50 inches; light brownish gray (10YR 6/2) silty clay loam; weak coarse angular blocky structure; firm; few very fine roots; few fine vesicular and tubular pores; few prominent black (10YR 2/1) organic coatings lining root channels and pores; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few medium and coarse irregular black (10YR 2/1) iron-manganese nodules with clear boundaries and strong brown (7.5YR 5/6) surfaces throughout; slightly acid; gradual smooth boundary.

BCg—50 to 58 inches; gray (10YR 6/1) silt loam; weak medium and coarse angular blocky structure; friable; few very fine roots; few fine vesicular and tubular pores; few prominent very dark gray (10YR 3/1) organic coatings lining root channels and pores; few distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine and medium irregular black (10YR 2/1) iron-manganese nodules with clear boundaries and strong brown (7.5YR 4/6) surfaces throughout; neutral; clear smooth boundary.

Cg—58 to 69 inches; grayish brown (10YR 5/2) silt

loam; massive, friable; few fine and medium vesicular and tubular pores; few prominent very dark gray (10YR 3/1) organic coatings lining root channels and pores; many medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (5YR 2.5/1) iron-manganese nodules with diffuse boundaries and yellowish red (5YR 5/6) surfaces throughout; about 8 percent sand; neutral; clear smooth boundary.

2Btgb—69 to 80 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium prismatic structure parting to weak medium angular blocky, firm; common medium and coarse vesicular and tubular pores; few prominent very dark gray (10YR 3/1) organic coatings lining root channels and pores; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium and coarse irregular black (5YR 2.5/1) and yellowish red (5YR 4/6) iron-manganese nodules with clear boundaries throughout; about 15 percent sand and 2 percent pebbles; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 40 to 65 inches
Thickness of the loess: 55 to about 80 inches
Texture of the particle-size control section: Averages between 35 and 42 percent clay; some pedons have one or more thin subhorizons that contain as much as 45 percent clay
Other features: Some pedons have a B/E horizon. This horizon is less than 3 inches thick.

Ap or A horizon:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR
Value—4 to 6 (6 or 7 dry)
Chroma—1 or 2
Texture—silt loam

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—typically silty clay loam; some subhorizons are silty clay, and the lower part is silt loam in some pedons

Cg horizon and BCg horizon (if it occurs):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silt loam

2Cg and/or 2Ab or 2Bb horizon (if it occurs):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silt loam, loam, silty clay loam, or clay loam

993A—Cowden-Piasa silt loams, 0 to 2 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Broad interfluves

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Cowden and similar soils: 50 percent
Piasa and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thicker dark surface layer
- Soils that do not have a subsurface layer
- Soils that contain less clay in the subsoil

Dissimilar soils:
- The somewhat poorly drained Coulterville and Darmstadt soils in the higher landform positions
- Small areas of depressional soils that remain wet for periods that extend into the growing season

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”

- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Darmstadt Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Albic Natraqualfs

Typical Pedon for MLRA 114

Darmstadt silt loam, on a nearly level summit in a cultivated field, at an elevation of about 470 feet above mean sea level; about 2 miles south of Smithton, in St. Clair County, Illinois; approximately 1,202 feet west and 84 feet south of the northeast corner of sec. 9, T. 2 S., R. 8 W.; USGS Freeburg, Illinois, topographic quadrangle; lat. 38 degrees 22 minutes 52 seconds N. and long. 89 degrees 59 minutes 07 seconds W., NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak very fine granular; friable; many very fine roots; few fine continuous tubular pores; few fine rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; 1 percent exchangeable sodium; neutral; abrupt smooth boundary.

E—8 to 11 inches; light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; common very fine roots; few fine constricted tubular pores; many fine and medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries throughout; 4 percent exchangeable sodium; neutral; abrupt smooth boundary.

Btn1—11 to 16 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; many very fine roots; few faint grayish brown (10YR 5/2) clay films on faces of peds; common medium faint grayish brown (10YR 5/2) iron depletions and common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; few medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; 7 percent exchangeable sodium; very strongly acid; gradual smooth boundary.

Btn2—16 to 21 inches; pale brown (10YR 6/3) silty clay loam; moderate medium prismatic structure parting to strong medium angular blocky; firm; common very fine roots; common distinct gray (10YR 5/1) clay films on faces of peds; many fine faint grayish brown (10YR 5/2) iron depletions and many fine distinct brownish yellow (10YR 6/6) and many fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation and few medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear boundaries and strong brown (7.5YR 4/6) surfaces throughout; 12 percent exchangeable sodium; moderately acid; gradual smooth boundary.

Btn3—21 to 27 inches; pale brown (10YR 6/3) and light brownish gray (10YR 6/2) silty clay loam; moderate coarse prismatic structure; firm; few very fine roots; few distinct gray (10YR 5/1) clay films on faces of peds; many coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few medium irregular very dark brown (7.5YR 2.5/2) masses of iron-manganese accumulation with diffuse boundaries and strong brown (7.5YR 5/6) surfaces throughout; 17 percent exchangeable sodium; slightly acid; gradual smooth boundary.

Btng1—27 to 35 inches; light brownish gray (10YR 6/2) silty clay loam; weak coarse prismatic structure; firm; few very fine roots; common fine vesicular pores; few distinct gray (10YR 5/1) clay films on vertical faces of peds and few distinct black (10YR 2/1) and very dark gray (10YR 3/1) organo-clay films lining root channels and pores; few medium faint dark gray (10YR 4/1) iron depletions and few medium distinct dark yellowish brown (10YR 4/4) and light yellowish brown (10YR 6/4) masses of iron accumulation in the matrix; common coarse irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation with diffuse strong brown (7.5YR 4/6) boundaries; 20 percent exchangeable sodium; neutral; clear smooth boundary.

Btng2—35 to 39 inches; light gray (10YR 7/1) silty clay loam; weak coarse prismatic structure; friable; few very fine roots; few very fine vesicular pores; few distinct gray (10YR 5/1) clay films on vertical faces of peds; few coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium irregular black (7.5YR 2.5/1) and common coarse irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation in the matrix; 25 percent exchangeable sodium; slightly alkaline; abrupt smooth boundary.

Cng1—39 to 44 inches; light gray (10YR 7/1) silt loam;

massive; friable; few very fine roots; few very fine vesicular pores; many coarse prominent yellowish brown (10YR 5/6 and 5/8) masses of iron accumulation in the matrix; common medium and coarse irregular black (7.5YR 2.5/1) and strong brown (7.5YR 5/6) masses of iron-manganese accumulation; few medium irregular white (10YR 8/1) carbonate nodules throughout; 25 percent exchangeable sodium; slightly effervescent; slightly alkaline; abrupt smooth boundary.

Cng2—44 to 62 inches; light gray (10YR 7/1) silt loam; massive; friable; few fine tubular and vesicular pores; few distinct very dark grayish brown (10YR 3/2) organo-clay films lining root channels and pores; many coarse prominent yellowish brown (10YR 5/6 and 5/8) masses of iron accumulation in the matrix; few medium irregular black (7.5YR 2.5/1) and many medium and coarse irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 25 percent exchangeable sodium; slightly effervescent; moderately alkaline; gradual smooth boundary.

Cg—62 to 80 inches; light gray (10YR 7/1) silt loam; massive; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films lining root channels; many coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (7.5YR 2.5/1) and common medium irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; moderately alkaline.

Range in Characteristics

Depth to the base of the natric horizon: 30 to 60 inches; typically 35 to 50 inches

Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 10 percent sand; the maximum clay content in any subhorizon is 42 percent

Other features: In some eroded areas, the E horizon has been mixed into the Ap horizon. Some pedons have a Bg, BC, 2Bt, 2Bg, or 2BC horizon in the lower part of the solum. Some pedons have 2Ab, 2Btb, and/or 2C horizons below a depth of 45 inches.

Ap or A horizon:
Hue—10YR
Value—3 to 5 (5 or 6 dry)
Chroma—2 or 3
Texture—silt loam; silty clay loam in some pedons in severely eroded areas

E horizon:
Hue—10YR
Value—5 or 6 (6 to 8 dry)
Chroma—2
Texture—silt loam

Btn or Btng horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 to 6
Texture—dominantly silty clay loam; thin subhorizons of silty clay in some pedons; grades to silt loam in the lower part in some pedons

Cng or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 to 7
Chroma—1 or 2
Texture—silt loam

Darwin Series

Taxonomic classification: Fine, smectitic, mesic Fluvaquentic Vertic Endoaquolls

Typical Pedon for MLRA 115B

Darwin silty clay, on a nearly level flood plain in a cultivated field, at an elevation of about 423 feet above mean sea level; about 1 mile east of Mitchell, in Madison County, Illinois; approximately 1,280 feet north and 60 feet east of the southwest corner of sec. 25, T. 4 N., R. 9 W.; USGS Wood River, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 45 minutes 52 seconds N. and long. 90 degrees 03 minutes 24 seconds W., NAD 27:

Ap1—0 to 3 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate medium granular structure; firm; many very fine and few fine roots; neutral; abrupt smooth boundary.

Ap2—3 to 10 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; strong fine and medium angular blocky structure; very firm; common very fine and few fine roots; few fine rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation; neutral; abrupt smooth boundary.

AB—10 to 16 inches; very dark gray (10YR 3/1) silty clay, dark gray (10YR 4/1) dry; moderate fine and medium angular blocky structure; very firm; common very fine and few fine roots; common faint very dark gray (10YR 3/1) pressure faces on faces of peds; few fine rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation; slightly acid; clear smooth boundary.

Bg1—16 to 28 inches; dark gray (2.5Y 4/1) silty clay;

weak medium prismatic structure parting to moderate fine and medium angular blocky; very firm; common very fine and few fine roots; many faint dark gray (2.5Y 4/1) pressure faces on faces of peds; common fine distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; few fine rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation; slightly acid; gradual smooth boundary.

Bg2—28 to 40 inches; dark gray (2.5Y 4/1) silty clay; moderate medium prismatic structure parting to strong fine and medium angular blocky; very firm; few very fine roots; many distinct dark gray (2.5Y 4/1) pressure faces on faces of peds; few fine distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; few fine rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation; slightly acid; gradual smooth boundary.

Bg3—40 to 52 inches; dark gray (5Y 4/1) silty clay; moderate medium prismatic structure parting to moderate fine and medium angular blocky; very firm; few very fine roots; many distinct dark gray (5Y 4/1) pressure faces on faces of peds; common fine prominent yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; few fine rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation; slightly acid; gradual smooth boundary.

Bg4—52 to 62 inches; dark gray (5Y 4/1) silty clay; moderate coarse prismatic structure parting to moderate medium and coarse angular blocky; very firm; few very fine roots; many distinct dark gray (5Y 4/1) pressure faces on faces of peds; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation; neutral; gradual smooth boundary.

BCg—62 to 69 inches; gray (5Y 5/1) silty clay loam; weak coarse prismatic structure; firm; few very fine roots; common distinct very dark gray (2.5Y 3/1) organo-clay films on vertical faces of peds; common medium prominent yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; common fine and medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; neutral; clear smooth boundary.

Cg—69 to 80 inches; olive gray (5Y 5/2) silty clay loam; friable; few prominent very dark gray (2.5Y 3/1) organo-clay films lining root channels and filling vesicular pores; many medium and coarse prominent yellowish brown (10YR 5/6) and common fine and medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; common fine and medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; neutral.

Range in Characteristics

Depth to the base of the cambic horizon: 40 to more than 60 inches

Thickness of the mollic epipedon: 10 to 24 inches; the mollic epipedon extends into the upper part of the Bg horizon in some pedons

Texture of the particle-size control section: Averages between 45 and 60 percent clay; averages less than 5 percent sand in the series control section

Depth to carbonates (if they occur): Carbonates are in the lower part of the Bg horizon and in the Cg horizon.

Ap or A horizon:

Hue—10YR, 2.5Y, or N

Value—2 or 3 (4 or 5 dry)

Chroma—0 to 2

Texture—typically silty clay, but the range includes silty clay loam and clay

Bg horizon:

Hue—10YR, 2.5Y, 5Y, or N

Value—3 to 6

Chroma—0 to 2

Texture—typically silty clay; some pedons contain subhorizons of clay, and some pedons have subhorizons in the lower part that are silty clay loam

Cg horizon:

Hue—10YR, 2.5Y, 5Y, or N

Value—4 to 6

Chroma—0 to 2

Texture—typically silty clay loam, silty clay, or clay; some pedons contain subhorizons of silt loam, and some pedons are stratified

1071A—Darwin silty clay, undrained, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Position on the landform: Old stream channels, oxbows, and marshes

Soil Properties and Qualities

Drainage class: Poorly drained

Dominant parent material: Slackwater sediments
Flooding frequency: Occasional

Map Unit Composition

Darwin and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a thicker dark surface layer than that of the Darwin soil
- Soils that contain more clay in the subsoil than the Darwin soil
- Soils that contain more sand in the substratum than the Darwin soil

Dissimilar soils:
- The well drained Landes soils on natural levees

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

8071L—Darwin silty clay, 0 to 2 percent slopes, occasionally flooded, long duration

Setting

Landform: Flood plains
Position on the landform: Backswamps

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Slackwater sediments
Flooding frequency: Occasional

Map Unit Composition

Darwin and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner dark surface layer than that of the Darwin soil
- Soils that contain more clay in the subsoil than the Darwin soil
- Soils that contain more sand in the substratum than the Darwin soil

Dissimilar soils:
- The well drained Landes soils on natural levees

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Drury Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Dystric Eutrudepts

Typical Pedon for MLRA 115B

Drury silt loam, in a gently sloping area in a cultivated field (fig. 3), at an elevation of about 465 feet above mean sea level; about 3 miles west of Maeystown, in Monroe County, Illinois; approximately 2,380 feet southeast of the intersection of Bluff Road and the railroad crossing and 820 feet northeast of the railroad tracks, parcel S. 701, C. 495, T. 3 S., R. 11 W.; USGS Selma, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 13 minutes 52 seconds N. and long. 90 degrees 16 minutes 54 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; common very fine and few fine roots; few fine continuous tubular pores; neutral; abrupt smooth boundary.

Bw1—7 to 12 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine subangular blocky structure; friable; few very fine and fine roots; few medium continuous tubular pores; many faint dark brown (10YR 3/3) organo-clay films on faces of peds and lining vertical tubular pores; neutral; clear smooth boundary.

Bw2—12 to 19 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; few very fine and fine roots; common fine continuous tubular pores; common faint dark brown (10YR 3/3) organo-clay films on faces of peds and lining vertical tubular pores; neutral; gradual smooth boundary.

Bw3—19 to 26 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few very fine and fine roots;

Figure 3.—Stripcropping in a cultivated area of Drury soils on the colluvial slopes at the base of the bluff. The forested bluff is in an area of Stookey soils.

common fine continuous tubular pores; common faint dark brown (10YR 3/3) organo-clay films on faces of peds and lining vertical tubular pores; neutral; gradual smooth boundary.

Bw4—26 to 36 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine and fine roots; common fine continuous tubular pores; few faint dark brown (10YR 3/3) organo-clay films on faces of peds and lining vertical tubular pores; neutral; gradual smooth boundary.

Bw5—36 to 43 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; very friable; few very fine roots; common fine continuous tubular pores; few faint dark brown (10YR 3/3) organo-clay films on faces of peds and lining vertical tubular pores; neutral; gradual smooth boundary.

C1—43 to 70 inches; dark yellowish brown (10YR 4/4) silt loam; massive; very friable; few very fine and fine continuous tubular pores; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine rounded black (N 2.5/0) masses of iron-manganese accumulation; neutral; gradual smooth boundary.

C2—70 to 80 inches; dark yellowish brown (10YR 4/4) silt loam; massive; friable; few very fine continuous pores; few fine rounded black (N 2.5/0) masses of iron-manganese accumulation; neutral.

Range in Characteristics

Depth to the base of soil development: 26 to 45 inches; typically 30 to 40 inches

Texture of the particle-size control section: Averages between 18 and 25 percent clay

Depth to a buried soil (if it occurs): More than 50 inches

Depth to carbonates (if they occur): More than 40 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4 (4 to 6 dry)
Chroma—2 to 4
Texture—silt loam

E horizon (if it occurs):
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—3 or 4
Texture—silt loam

Bw horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6 in the upper part; 2 to 6 in the lower part
Texture—silt loam

C horizon:
Hue—10YR
Value—3 to 6
Chroma—2 to 4
Texture—silt loam; some pedons show evidence of stratification, most commonly below a depth of 45 inches; strata are loam, silt loam, or very fine sandy loam

75B—Drury silt loam, 2 to 5 percent slopes

Setting

Landform: Loess bluffs
Position on the landform: Footslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Silty local alluvium
Flooding: None

Map Unit Composition

Drury and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Drury soil
- Soils that contain more clay in the subsoil than the Drury soil
- Soils that contain more sand in the substratum than the Drury soil

Dissimilar soils:
- The moderately well drained Arenzville and Wilbur soils along drainageways
- Areas of soils that contain limestone flagstones throughout

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

75C—Drury silt loam, 5 to 10 percent slopes

Setting

Landform: Loess bluffs
Position on the landform: Footslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Silty local alluvium
Flooding: None

Map Unit Composition

Drury and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Drury soil
- Soils that contain more clay in the subsoil than the Drury soil
- Soils that contain more sand in the substratum than the Drury soil

Dissimilar soils:
- The moderately well drained Arenzville and Wilbur soils along drainageways
- Areas of soils that contain limestone flagstones throughout

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”

- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

75D—Drury silt loam, 10 to 18 percent slopes

Setting

Landform: Loess bluffs
Position on the landform: Footslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Silty local alluvium
Flooding: None

Map Unit Composition

Drury and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Drury soil
- Soils that contain more sand in the substratum than the Drury soil
- Soils that contain carbonates in the subsoil

Dissimilar soils:
- Areas of soils that have bedrock within a depth of 40 inches
- Areas of soils that contain limestone flagstones throughout

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

75F—Drury silt loam, 18 to 35 percent slopes

Setting

Landform: Loess bluffs
Position on the landform: Footslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Silty local alluvium
Flooding: None

Map Unit Composition

Drury and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Drury soil
- Soils that contain more sand in the substratum than the Drury soil
- Soils that contain carbonates in the subsoil

Dissimilar soils:
- Areas of soils that have bedrock within a depth of 40 inches
- Areas of soils that contain limestone flagstones throughout
- Areas that have deep gullies

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Dupo Series

Taxonomic classification: Coarse-silty over clayey, mixed over smectitic, superactive, nonacid, mesic Aquic Udifluvents

Typical Pedon for MLRA 115B

Dupo silt loam, on a nearly level flood plain in a cultivated field, at an elevation of about 390 feet above mean sea level; about 2.5 miles west of Modoc, in Randolph County, Illinois; Illinois State Plane Coordinates 506,150 feet north and 526,600 feet east (Illinois West Zone), T. 5 S., R. 9 W.; USGS Prairie Du Rocher, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 03 minutes 20 seconds N. and long. 90 degrees 04 minutes 28 seconds W., NAD 27:

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; very friable; many very fine and fine roots; few very fine continuous tubular pores; few fine rounded strong brown (7.5YR 5/6) masses of iron-manganese accumulation; slightly alkaline; abrupt smooth boundary.

C1—9 to 17 inches; brown (10YR 5/3) silt loam; massive; very friable; common very fine and fine

roots; few very fine continuous tubular pores; common fine faint grayish brown (10YR 5/2) iron depletions and common fine faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; slightly alkaline; clear smooth boundary.

C2—17 to 25 inches; brown (10YR 5/3) silt loam; massive; very friable; common very fine and fine roots; common very fine and fine continuous tubular pores; common very dark grayish brown (10YR 3/2) wormcasts; many medium faint grayish brown (10YR 5/2) iron depletions and many medium faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; neutral; abrupt smooth boundary.

2Ab1—25 to 39 inches; very dark gray (10YR 3/1) silty clay; moderate medium prismatic structure parting to strong fine angular blocky; very firm; few very fine and fine roots; common fine constricted tubular pores; common distinct dark yellowish brown (10YR 4/4) clay depletions on vertical faces of prisms; common fine distinct dark yellowish brown (10YR 4/4) and common medium prominent yellowish red (5YR 4/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

2Ab2—39 to 59 inches; very dark gray (10YR 3/1) silty clay; moderate coarse prismatic structure parting to moderate medium angular blocky; very firm; few very fine and fine roots; few fine and medium constricted tubular pores; few faint dark yellowish brown (10YR 4/4) clay depletions on vertical faces of prisms; common faint very dark gray (10YR 3/1) pressure faces on faces of peds; common fine distinct dark yellowish brown (10YR 4/4) and few medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; neutral; gradual smooth boundary.

2Bgb—59 to 75 inches; dark gray (10YR 4/1) silty clay; weak coarse prismatic structure; very firm; few very fine and fine roots; common distinct dark gray (10YR 4/1) pressure faces on faces of peds; common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; slightly alkaline; gradual smooth boundary.

2Cg—75 to 80 inches; gray (2.5Y 5/1) clay; massive; very firm; common shiny dark gray (2.5Y 4/1) nonintersecting slickensides; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral.

Range in Characteristics

Depth to a buried soil: 20 to 40 inches
Texture of the particle-size control section: Averages between 10 and 18 percent clay in the silty alluvium, between 35 and 55 percent clay in the buried soils, and less than 10 percent sand throughout the profile
Reaction: Neutral or slightly acid; moderately acid to slightly alkaline in some layers of some pedons
Depth to carbonates (if they occur): More than 40 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry); some pedons in undisturbed areas have strata with value of 3 (5 dry)
Chroma—1 to 3
Texture—silt loam; stratified in many pedons in undisturbed areas

C horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 3
Texture—dominantly silt loam or silt; stratified with thin lenses of other textures in some pedons

2Ab horizon:
Hue—10YR or N; redoximorphic concentrations with redder hue in some pedons
Value—2 to 4
Chroma—0 to 2
Texture—silty clay, clay, or silty clay loam

2Bgb and 2Cg horizons (if they occur):
Hue—10YR or 2.5Y; redoximorphic features with redder hue in some pedons
Value—3 to 6
Chroma—1 or 2; redoximorphic features with higher chroma in some pedons
Texture—silty clay, clay, or silty clay loam

8180A—Dupo silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Recent, light-colored, silty alluvium overlying dark, clayey soils
Flooding frequency: Occasional

Map Unit Composition

Dupo and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain carbonates in the recent alluvium
- Soils that contain more clay in the recent alluvium than the Dupo soil
- Soils that have a dark buried soil below a depth of 40 inches

Dissimilar soils:
- The moderately well drained Arenzville and Wilbur soils; in positions closer to the bluff than those of the Dupo soil
- The poorly drained Birds soils in slight depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

3646A—Fluvaquents, loamy, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Very poorly drained
Dominant parent material: Loamy alluvium
Flooding frequency: Frequent

Map Unit Composition

Fluvaquents, loamy, and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that contain more clay throughout than the Fluvaquents
- Soils that contain more sand in the substratum than the Fluvaquents
- Soils that do not contain carbonates

Dissimilar soils:
- The moderately well drained Haynie soils on natural levees

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

3847L—Fluvaquents-Orthents complex, frequently flooded, long duration

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Fluvaquents—poorly drained; Orthents—well drained
Dominant parent material: Loamy alluvium
Flooding frequency: Frequent

Map Unit Composition

Fluvaquents and similar soils: 50 percent
Orthents and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain more clay throughout
- Soils that contain more sand in the substratum
- Soils that do not contain carbonates

Dissimilar soils:
- The moderately well drained Haynie soils on natural levees

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Fults Series

Taxonomic classification: Fine, smectitic, mesic Vertic Endoaquolls

Typical Pedon for MLRA 115B

Fults silty clay, on a slope of 1 percent, on a slightly

undulating flood plain in a cultivated field; at an elevation of about 385 feet above mean sea level; about 2.5 miles northwest of Chalfin Bridge, in Monroe County, Illinois; approximately 390 feet south and 120 feet west of the northeast corner of sec. 4, T. 4 S., R. 11 W.; USGS Selma, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 13 minutes 23 seconds N. and long. 90 degrees 18 minutes 47 seconds W., NAD 27:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay, dark gray (10YR 4/1) dry; moderate fine granular structure; very firm; common fine roots; neutral; 57 percent clay and 1 percent sand; abrupt smooth boundary.

A—7 to 12 inches; very dark gray (10YR 3/1) silty clay, dark gray (10YR 4/1) dry; moderate medium angular blocky structure; very firm; few fine roots; 58 percent clay and 1 percent sand; neutral; clear smooth boundary.

Btg1—12 to 18 inches; dark gray (10YR 4/1) clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few fine roots; many distinct very dark gray (5Y 3/1) organo-clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; 61 percent clay and 1 percent sand; neutral; clear smooth boundary.

Btg2—18 to 26 inches; dark gray (5Y 4/1) clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few fine roots; many distinct very dark gray (5Y 3/1) organo-clay films on faces of peds; few fine prominent brown (7.5YR 4/4) masses of iron accumulation in the matrix; 59 percent clay and 3 percent sand; neutral; clear smooth boundary.

Btg3—26 to 32 inches; dark gray (5Y 4/1) clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few fine roots; common distinct very dark gray (5Y 3/1) organo-clay films on faces of peds; common fine prominent brown (7.5YR 4/4) masses of iron accumulation in the matrix; 53 percent clay and 13 percent sand; neutral; clear smooth boundary.

2Btg4—32 to 38 inches; dark gray (5Y 4/1) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many faint very dark gray (5Y 3/1) organo-clay films on faces of peds; common medium prominent yellowish red (5YR 5/8) masses of iron accumulation in the matrix; 35 percent clay and 34 percent sand; neutral; clear smooth boundary.

2Btg5—38 to 42 inches; dark gray (5Y 4/1) sandy clay loam; weak medium prismatic structure parting to weak medium subangular blocky; very friable; few fine roots; few faint very dark gray (5Y 3/1) organo-clay films on faces of peds; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; 23 percent clay and 52 percent sand; neutral; clear smooth boundary.

2Cg—42 to 60 inches; dark gray (5Y 4/1), stratified fine sandy loam; massive; very friable; many medium prominent brown (7.5YR 4/4) masses of iron accumulation in the matrix; 14 percent clay and 76 percent sand; neutral.

Range in Characteristics

Depth to the base of soil development: 32 to 64 inches

Thickness of the mollic epipedon: 10 to 24 inches; the mollic epipedon extends into the upper part of the B horizon in many pedons

Depth to the loamy 2B horizon: 24 to 40 inches; typically 24 to 36 inches

Depth to carbonates: These soils typically do not have carbonates within the particle-size control section, but some pedons contain carbonates in the loamy or sandy alluvium.

Other features: Some pedons have an AB or a BA horizon. Some pedons have a 2BC horizon.

Ap and A horizons:
Hue—10YR or 2.5Y
Value—2 or 3 (3 to 5 dry)
Chroma—1 or 2
Texture—silty clay loam or silty clay; clay in some pedons

Btg or Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay or clay; some subhorizons are silty clay loam or clay loam with more than 35 percent clay

2Btg or 2Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silt loam, loam, silty clay loam, clay loam, sandy clay loam, sandy loam, fine sandy loam, or very fine sandy loam; typically stratified

2Cg or 2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 3

Texture—stratified; individual strata range from silty clay loam to very fine sand

1591A—Fults silty clay, undrained, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains
Position on the landform: Swales and depressions

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Slackwater sediments and the underlying stratified loamy or sandy alluvium
Flooding frequency: Occasional

Map Unit Composition

Fults and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a thicker dark surface layer than that of the Fults soil
- Soils that contain more sand in the subsoil than the Fults soil
- Soils that contain more clay in the subsoil and substratum than the Fults soil

Dissimilar soils:
- The somewhat poorly drained Nameoki and Shaffton soils on the higher parts of the flood plain; at the edge of the mapped areas
- The very poorly drained Booker soils in closed depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

8591A—Fults silty clay, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains
Position on the landform: Nearly level or gently undulating areas

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Slackwater sediments and the underlying stratified loamy or sandy alluvium
Flooding frequency: Occasional

Map Unit Composition

Fults and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a thinner dark surface layer than that of the Fults soil
- Soils that contain more sand in the subsoil than the Fults soil
- Soils that contain more clay in the subsoil and substratum than the Fults soil

Dissimilar soils:
- The somewhat poorly drained Nameoki and Shaffton soils on the higher parts of the flood plain
- The very poorly drained Booker soils in depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Grantfork Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Aeric Epiaqualfs

Typical Pedon for MLRA 114

Grantfork silty clay loam, on a slope of 9 percent, on a backslope in a severely eroded area in a field of clover, at an elevation of about 590 feet above mean sea level; about 1 mile northeast of New Douglas, in Madison County, Illinois; approximately 732 feet east and 560 feet north of the southwest corner of sec. 3, T. 6 N., R. 5 W.; USGS New Douglas, Illinois, topographic quadrangle; lat. 38 degrees 59 minutes 42 seconds N. and long. 89 degrees 39 minutes 17 seconds W., NAD 27:

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) silty clay loam, light yellowish brown (10YR 6/4) dry; weak fine and medium subangular blocky

structure; firm; common very fine and few fine roots; few very fine and fine tubular pores; few fine rounded dark reddish brown (5YR 3/4) masses of iron-manganese accumulation; 11 percent sand; few pebbles; neutral; abrupt smooth boundary.

Bt—5 to 12 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium angular blocky structure in 2-inch plowsole and weak medium subangular blocky below; firm; few very fine roots; many faint brown (10YR 4/3) clay films on faces of peds in the upper part and many faint grayish brown (10YR 4/2) clay films on faces of peds in the lower part; common fine distinct grayish brown (10YR 5/2) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 17 percent sand; few pebbles; neutral; clear smooth boundary.

Btg—12 to 23 inches; grayish brown (10YR 5/2) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; 3 percent exchangeable sodium; 24 percent sand; few pebbles; slightly alkaline; abrupt smooth boundary.

Btng1—23 to 29 inches; light brownish gray (2.5Y 6/2) loam; weak medium and coarse prismatic structure parting to weak medium angular blocky; firm; few very fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent dark yellowish brown (10YR 4/4) and common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; 6 percent exchangeable sodium; 24 percent sand; few pebbles; moderately alkaline; clear smooth boundary.

Btng2—29 to 37 inches; grayish brown (10YR 5/2) clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct dark yellowish brown (10YR 4/4) and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; 8 percent exchangeable sodium; 25 percent sand; few pebbles; moderately alkaline; clear smooth boundary.

2Btng3—37 to 49 inches; light brownish gray (10YR 6/2) clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; many distinct grayish brown (10YR 5/2) clay films on faces of peds and brown (10YR 4/3) clay films lining pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (10YR 2/1) iron-manganese nodules with sharp boundaries; 10 percent exchangeable sodium; 35 percent sand; common pebbles; moderately alkaline; clear smooth boundary.

2Btng4—49 to 57 inches; light brownish gray (10YR 6/2) loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; many distinct dark grayish brown (10YR 4/2) and dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (10YR 2/1) iron-manganese nodules with sharp boundaries; 11 percent exchangeable sodium; 33 percent sand; common pebbles; strongly alkaline; clear smooth boundary.

2BCtng—57 to 67 inches; light brownish gray (10YR 6/2) clay loam; weak coarse prismatic structure; friable; common faint grayish brown (10YR 5/2) clay films on vertical faces of peds; few prominent very dark gray (10YR 3/1) organo-clay films lining pores; many medium prominent yellowish brown (10YR 5/6) and yellowish red (5YR 5/8) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; 11 percent exchangeable sodium; 41 percent sand; common pebbles; moderately alkaline; clear smooth boundary.

3Btgb—67 to 80 inches; gray (2.5Y 5/1) clay; weak medium prismatic structure parting to moderate medium angular blocky; very firm; many faint gray (2.5Y 5/1) pressure faces on faces of peds; few prominent very dark gray (10YR 3/1) organo-clay films lining pores; many coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix in the upper part; common pebbles and few cobbles; slightly alkaline.

Range in Characteristics

Depth to the base of the argillic horizon: 45 to more than 80 inches

Depth to till: 0 to 45 inches; typically 30 to 40 inches

Other features: Some pedons have buried soils below the C horizon.

Ap or A horizon:
Hue—10YR
Value—3 or 4 (4 to 6 dry)
Chroma—2 to 4
Texture—silty clay loam, clay loam, silt loam, or loam

E, EB, or BE horizon (if it occurs):
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 to 4
Texture—silty clay loam, clay loam, silt loam, or loam

Bt, Btg, Btng, 2Bt, 2Btg, or 2Btng horizon:
Hue—10YR, 2.5Y, or 7.5YR
Value—4 to 6; 4 to 7 in the lower part in some pedons
Chroma—2 to 4 in the upper part; 1 to 4 in the lower part
Texture—silty clay loam, clay loam, silt loam, or loam

BCtng or 2BCg horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 or 2
Texture—silty clay loam, clay loam, silt loam, or loam

Cg or 2Cg horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 or 2
Texture—typically clay loam, but the range includes loam or silt loam

Hamburg Series

Taxonomic classification: Coarse-silty, mixed, superactive, calcareous, mesic Typic Udorthents

Typical Pedon for MLRA 115B

Hamburg silt loam, on a slope of 30 percent, on a southwest-facing side slope in a prairie on a loess bluff, at an elevation of about 465 feet above mean sea level; about 2 miles southeast of Prairie du Rocher, in Randolph County, Illinois; Illinois State Plane Coordinates 509,400 feet north and 528,600 feet east (Illinois West Zone), T. 5 S., R. 9 W.; USGS Prairie du Rocher, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 03 minutes 55 seconds N. and long. 90 degrees 04 minutes 02 seconds W., NAD 27:

A—0 to 3 inches; brown (10YR 4/3) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; very friable; few medium and coarse carbonate concretions; slightly effervescent; slightly alkaline; clear smooth boundary.

AC—3 to 7 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium granular structure; very friable; few medium and coarse carbonate concretions; slightly effervescent; slightly alkaline; gradual smooth boundary.

C1—7 to 15 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common medium and coarse masses of carbonate accumulation and carbonate concretions; strongly effervescent; slightly alkaline; gradual wavy boundary.

C2—15 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; massive; friable, hard; few coarse masses of carbonate accumulation and common medium and coarse carbonate concretions; violently effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess: 80 inches or more
Texture of the particle-size control section: Averages less than 12 percent clay, two or more times as much coarse silt as fine silt, and more than 10 percent sand (mostly very fine sand)
Reaction: Slightly alkaline or moderately alkaline throughout (except for the surface horizon, which may be neutral)
Carbonates: Carbonates are typically throughout the profile.

A horizon:
Hue—10YR
Value—3 or 4 (5 or 6 dry)
Chroma—2 or 3
Texture—silt loam, silt, or very fine sandy loam

AC and C horizons:
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—silt loam, silt, or very fine sandy loam

30F—Hamburg silt loam, 18 to 35 percent slopes

Setting

Landform: Loess bluffs
Position on the landform: Hillslopes

Soil Properties and Qualities

Drainage class: Somewhat excessively drained

Dominant parent material: Thick, coarse, calcareous loess
Flooding: None

Map Unit Composition

Hamburg and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that contain more clay throughout than the Hamburg soil
- Soils that do not contain carbonates in the upper part of the substratum
- Soils that have a thicker surface layer than that of the Hamburg soil and have a weakly developed subsoil

Dissimilar components:
- The well drained Lacrescent soils on narrow stony talus slopes
- Limestone bedrock ledges and escarpments

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Haynie Series

Taxonomic classification: Coarse-silty, mixed, superactive, calcareous, mesic Mollic Udifluvents

Typical Pedon for MLRA 115B

Haynie silt loam, in a nearly level area in a cultivated field, at an elevation of about 375 feet above mean sea level; about 0.75 mile southwest of Kaskaskia, in Randolph County, Illinois; Illinois State Plane Coordinates 453,665 feet north and 571,165 feet east (Illinois West Zone), T. 7 S., R. 8 W.; USGS Kaskaskia, Missouri-Illinois, topographic quadrangle; lat. 37 degrees 54 minutes 43 seconds N. and long. 89 degrees 55 minutes 44 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; slightly alkaline; abrupt smooth boundary.
C1—8 to 18 inches; brown (10YR 4/3) very fine sandy loam; massive; very friable; slightly effervescent; slightly alkaline; clear smooth boundary.
C2—18 to 42 inches; grayish brown (10YR 5/2) very fine sandy loam; massive; very friable; strongly effervescent; slightly alkaline; clear smooth boundary.
C3—42 to 53 inches; dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) very fine sandy loam; massive; very friable; common fine prominent dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; few lenses of silty clay loam; strongly effervescent; slightly alkaline; abrupt smooth boundary.
C4—53 to 60 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; common fine prominent dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: Less than 10 inches
Texture of the particle-size control section: Averages less than 18 percent clay and less than 15 percent sand or coarser sand, but the content of clay combined with the content of silt is more than 35 percent and the total sand content is typically more than 15 percent
Depth to carbonates: 0 to 10 inches; carbonates are throughout the series control section

Ap or A horizon:
Hue—10YR or 2.5Y
Value—3 (5 dry)
Chroma—2
Texture—silt loam, very fine sandy loam, or silty clay loam

C horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4 (dominantly 2)
Texture—typically silt loam or very fine sandy loam; some pedons contain strata of loam and fine sandy loam and, in the lower part, loamy very fine sand or loamy fine sand

3394B—Haynie silt loam, 2 to 5 percent slopes, frequently flooded

Setting

Landform: Flood plains
Position on the landform: Low, broad natural levees

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Stratified, calcareous, silty and loamy recent alluvium
Flooding frequency: Frequent

Map Unit Composition

Haynie and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
• Soils that have a thinner dark surface layer than that of the Haynie soil
• Soils that contain more clay in the surface layer than the Haynie soil
• Areas of soils that have short, steep slopes

Dissimilar soils:
• The somewhat excessively drained Rocher and excessively drained Sarpy soils in the higher landform positions
• The very poorly drained, loamy Fluvaquents in sloughs and depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

8394B—Haynie silt loam, 2 to 5 percent slopes, occasionally flooded

Setting

Landform: Flood plains
Position on the landform: Low, broad natural levees

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Stratified, calcareous, silty and loamy recent alluvium
Flooding frequency: Occasional

Map Unit Composition

Haynie and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that contain more clay in the surface layer than the Haynie soil
• Soils that contain more sand throughout than the Haynie soil
• Areas of soils that have short, steep slopes

Dissimilar soils:
• The somewhat excessively drained Rocher soils in the higher landform positions
• The poorly drained Ambraw soils in slight depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Herrick Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon for MLRA 114

Herrick silt loam, in a nearly level area in a cultivated field, at an elevation of about 520 feet above mean sea level; about 2 miles east of Summerfield, in St. Clair County, Illinois; approximately 850 feet west and 520 feet north of the southeast corner of sec. 24, T. 2 N., R. 6 W.; USGS Trenton, Illinois, topographic quadrangle; lat. 38 degrees 35 minutes 53 seconds N. and long. 89 degrees 42 minutes 33 seconds W., NAD 27:

Ap—0 to 8 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many very fine roots; about 25 percent clay; slightly acid; abrupt smooth boundary.
A—8 to 13 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; strong medium granular structure; friable; many very fine roots; few fine rounded strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 26 percent clay; slightly acid; clear smooth boundary.
BE—13 to 18 inches; very dark grayish brown (10YR

3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak medium platy structure parting to moderate very fine subangular blocky; friable; common very fine roots; few faint light brownish gray (10YR 6/2) (dry) clay depletions on faces of peds and many distinct very dark brown (10YR 2/2) organic coatings on faces of peds; common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine rounded strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 32 percent clay; slightly acid; clear smooth boundary.

Bt1—18 to 28 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine and medium subangular blocky; firm; common very fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (10YR 2/1) masses of iron-manganese accumulation; about 37 percent clay; moderately acid; gradual smooth boundary.

Bt2—28 to 39 inches; brown (10YR 4/3) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation; about 36 percent clay; moderately acid; gradual smooth boundary.

Bt3—39 to 53 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine and medium distinct grayish brown (10YR 5/2) iron depletions and common fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation; about 33 percent clay; slightly acid; gradual smooth boundary.

BCt—53 to 60 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to weak coarse angular blocky; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions and common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation with clear strong brown (7.5YR 5/6) boundaries; about 29 percent clay; neutral; gradual smooth boundary.

C—60 to 80 inches; dark yellowish brown (10YR 4/4) silt loam; massive; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films lining vertical channels; common medium distinct light brownish gray (10YR 6/2) iron depletions and many fine and medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation with diffuse strong brown (7.5YR 5/6) boundaries; about 25 percent clay; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 45 to 60 inches

Thickness of the mollic epipedon: 10 to 21 inches; the mollic epipedon includes the E horizon in some pedons

Thickness of the loess: 50 to more than 80 inches

Texture of the particle-size control section: Averages between 35 and 42 percent clay and less than 7 percent sand

Other features: Some pedons have an incipient E horizon, and other pedons have an EB horizon.

Ap horizon and A horizon (if it occurs):
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 or 2
Texture—silt loam

E or BE horizon:
Hue—10YR
Value—3 or 4 (5 or 6 dry)
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt and/or Btg horizon:
Hue—10YR or 2.5Y; 5Y in the lower part in some pedons
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silty clay in the upper part; silty clay loam or silt loam in the lower part

C or 2C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—4 to 6
Chroma—2 to 6
Texture—typically silt loam; the range includes silty clay loam, clay loam, and loam

46A—Herrick silt loam, 0 to 2 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Nearly level summits and interfluves

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Herrick and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner dark surface layer than that of the Herrick soil
- Soils that contain less clay in the subsoil than the Herrick soil
- Soils that contain a concentration of exchangeable sodium in the subsoil

Dissimilar soils:
- The poorly drained Cowden and Virden soils in depressions
- The poorly drained Piasa soils, which have a natric horizon

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Hickory Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon for MLRA 114

Hickory silt loam, on a convex, north-facing slope of 30 percent in an area of mixed hardwoods, at an elevation of about 590 feet above mean sea level; about 8 miles north and 0.5 mile west of Greenville, in Bond County, Illinois; approximately 792 feet west and 38 feet north of the southeast corner of sec. 28, T. 7 N., R. 3 W.; USGS Coffeen, Illinois, topographic quadrangle; lat. 39 degrees 00 minutes 48 seconds N. and long. 89 degrees 25 minutes 11 seconds W., NAD 27:

A—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; many very fine and few fine and medium roots; few fine and medium continuous tubular pores; about 20 percent sand; very strongly acid; clear smooth boundary.

E—4 to 12 inches; light yellowish brown (10YR 6/4) silt loam, very pale brown (10YR 7/4) dry; weak very thick platy structure parting to weak fine granular; friable; few very fine to medium roots; few fine and medium continuous tubular pores; pockets of dark grayish brown (10YR 4/2) surface soil filling large root channels; about 20 percent sand; about 1 percent pebbles; strongly acid; clear smooth boundary.

Bt1—12 to 17 inches; yellowish brown (10YR 5/6) clay loam; moderate fine subangular blocky structure; firm; common very fine and few fine and medium roots; common distinct brown (10YR 4/3) clay films on faces of peds; about 1 percent pebbles; very strongly acid; clear smooth boundary.

Bt2—17 to 26 inches; dark yellowish brown (10YR 4/6) clay loam; moderate medium subangular blocky structure; firm; few very fine and medium roots; common distinct brown (10YR 5/3) clay films on faces of peds; about 2 percent fine and medium pebbles; very strongly acid; gradual smooth boundary.

Bt3—26 to 35 inches; yellowish brown (10YR 5/4) clay loam; moderate medium and coarse angular blocky structure; firm; few very fine and medium roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and few prominent brown (7.5YR 4/4) clay films coating medium pebbles; many medium and coarse prominent brownish yellow (10YR 6/8) and strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; about 3 percent fine and medium pebbles; very strongly acid; gradual smooth boundary.

Bt4—35 to 46 inches; yellowish brown (10YR 5/4) clay loam; weak medium and coarse prismatic structure parting to weak coarse angular blocky; firm; few very fine and medium roots; common

distinct dark yellowish brown (10YR 4/4) clay films on vertical faces of peds and few prominent brown (7.5YR 4/4) clay films coating medium and coarse pebbles; many coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; about 4 percent fine to coarse pebbles; strongly acid; diffuse smooth boundary.

BCt—46 to 58 inches; light yellowish brown (10YR 6/4) loam; weak medium and coarse subangular blocky structure; friable; few very fine and fine roots; few distinct dark yellowish brown (10YR 4/4) clay films on vertical faces of peds and few prominent brown (7.5YR 4/4) clay films coating medium pebbles; common medium distinct dark yellowish brown (10YR 4/6) and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; about 5 percent fine and medium pebbles; strongly acid; gradual smooth boundary.

CB—58 to 65 inches; yellowish brown (10YR 5/6) loam; massive; friable; few very fine and fine roots; few distinct brown (10YR 4/3) clay films lining root channels and coating medium pebbles; few fine distinct brown (10YR 5/3) iron depletions in the matrix; about 5 percent fine and medium pebbles; moderately acid; clear smooth boundary.

C—65 to 80 inches; variegated yellowish brown (10YR 5/4), strong brown (7.5YR 5/6), and light gray (2.5Y 7/1) loam; massive; friable; few very fine roots; about 3 percent fine and medium pebbles; slightly acid.

Range in Characteristics

Depth to the base of the argillic horizon: 40 to more than 80 inches
Thickness of the loess: 0 to 20 inches
Texture of the particle-size control section: Averages between 27 to 35 percent clay, between 15 and 45 percent fine sand and coarser, and less than 20 percent, by volume, gravel
Depth to carbonates (if they occur): More than 40 inches
Other features: Some pedons have a BE horizon.

A horizon (if it occurs):
Hue—10YR
Value—2 to 4 (4 to 6 dry)
Chroma—2 or 3
Texture—silt loam or loam

Ap horizon (if it occurs):
Hue—7.5YR or 10YR
Value—3 to 5 (5 to 7 dry)
Chroma—2 to 4
Texture—silt loam or loam; silty clay loam or clay loam in some pedons in eroded areas

E horizon (if it occurs):
Hue—10YR
Value—4 to 6 (5 to 7 dry)
Chroma—2 to 4
Texture—silt loam or loam

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—commonly clay loam; in some pedons the first subhorizon is silty clay loam, and in other pedons the lower horizons are loam or gravelly clay loam

CB or C horizon (if it occurs):
Hue—7.5YR, 10YR, or 2.5Y
Value—5 to 7
Chroma—1 to 8
Texture—loam, clay loam, or sandy loam
Content of gravel—averages about 5 percent; ranges from 2 to 20 percent

8F2—Hickory silt loam, 18 to 35 percent slopes, eroded

Setting

Landform: Till plains
Position on the landform: Convex side slopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Glacial till
Flooding: None

Map Unit Composition

Hickory and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
• Soils that contain more clay in the subsoil than the Hickory soil
• Areas of soils that are more sloping or less sloping than the Hickory soil
• Areas of soils that are severely eroded

Dissimilar components:
• The somewhat poorly drained Atlas soils at the upper end of drainageways

• The somewhat poorly drained Wakeland soils on narrow flood plains
• Areas of rock outcrop at the base of slopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Homen Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon for MLRA 114

Homen silt loam, in a gently sloping area in a cultivated field, at an elevation of about 560 feet above mean sea level; about 4 miles south of Coulterville, in Randolph County, Illinois; approximately 714 feet south and 45 feet east of the center of sec. 1, T. 5 S., R. 5 W.; USGS Percy, Illinois, topographic quadrangle; lat. 38 degrees 07 minutes 23 seconds N. and long. 89 degrees 36 minutes 05 seconds W., NAD 27:

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; many very fine and fine roots; few fine constricted tubular pores; few fine rounded black (N 2.5/0) iron-manganese concretions; about 23 percent clay; slightly acid; abrupt smooth boundary.

E—9 to 15 inches; yellowish brown (10YR 5/4) silt loam, light yellowish brown (10YR 6/4) dry; weak medium platy structure parting to moderate medium granular; friable; common very fine and fine roots; few fine continuous tubular pores; few fine rounded black (N 2.5/0) iron-manganese concretions; about 25 percent clay; very strongly acid; clear smooth boundary.

Bt—15 to 22 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; common very fine and fine roots; common fine and medium constricted tubular pores; common prominent very pale brown (10YR 7/3) (dry) clay depletions on faces of peds; common distinct yellowish brown (10YR 5/4) clay films on faces of peds; few fine and medium rounded black (N 2.5/0) iron-manganese concretions; about 29 percent clay; very strongly acid; abrupt smooth boundary.

Bt/E—22 to 28 inches; yellowish brown (10YR 5/6) silty clay loam (Bt); moderate fine and medium subangular blocky structure; firm; common fine roots along vertical faces of peds; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; few fine and medium rounded black (N 2.5/0) iron-manganese concretions; many prominent very pale brown (10YR 7/3) (dry) clay depletions on faces of peds and filling vertical interstices between peds (E); very strongly acid; abrupt smooth boundary.

B´t1—28 to 37 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots throughout; common prominent very pale brown (10YR 7/3) (dry) clay depletions on faces of peds and many prominent dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium irregular dark brown (7.5YR 3/4) masses of iron-manganese accumulation with clear strong brown (7.5YR 5/6) boundaries; about 32 percent clay; very strongly acid; clear smooth boundary.

B´t2—37 to 48 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots throughout; few prominent very pale brown (10YR 7/3) (dry) clay depletions on faces of peds and common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium irregular dark brown (7.5YR 3/4) masses of iron-manganese accumulation with clear strong brown (7.5YR 5/6) boundaries; about 30 percent clay; strongly acid; gradual smooth boundary.

B´t3—48 to 58 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots throughout; few very fine constricted tubular pores; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium

irregular very dark brown (7.5YR 2.5/2) masses of iron-manganese accumulation with clear strong brown (7.5YR 5/6) boundaries; about 28 percent clay; moderately acid; clear smooth boundary.

2BC—58 to 66 inches; brown (7.5YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few very fine roots throughout; common very fine and fine constricted tubular pores; few fine distinct pinkish gray (7.5YR 6/2) iron depletions in the matrix; few medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation; about 26 percent clay and 10 percent sand; moderately acid; gradual smooth boundary.

2C—66 to 80 inches; brown (7.5YR 4/4) silt loam; massive with few diagonal cleavage planes; friable; few very fine roots throughout; common fine and medium constricted tubular pores; few prominent black (N 2.5/0) iron-manganese coatings lining root channels and pores; few fine distinct pinkish gray (7.5YR 6/2) iron depletions and common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (7.5YR 2.5/1) and strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 24 percent clay and 12 percent sand; slightly acid.

Range in Characteristics

Depth to the base of the argillic horizon: 40 to 80 inches
Thickness of the loess: 40 to 80 inches
Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand
Other features: Some pedons have an EB or a BE horizon.

Ap horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry); 3 (5 or 6 dry) in undisturbed areas
Chroma—2 or 3; 1 or 2 in undisturbed areas
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam

Bt/E and B´t horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam, silty clay loam, clay loam, or loam

582B—Homen silt loam, 2 to 5 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Homen and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Homen soil
- Soils that contain more clay in the subsoil than the Homen soil
- Soils that are moderately eroded; near the edge of the mapped areas

Dissimilar soils:
- The somewhat poorly drained Marine soils in the less sloping landform positions
- The well drained Ruma soils in the more convex landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

582B2—Homen silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits, shoulders, and backslopes

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Homen and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Homen soil
- Soils that contain more clay in the subsoil than the Homen soil

Dissimilar soils:
- The somewhat poorly drained Marine soils in the less sloping landform positions
- The well drained Ruma soils in the more convex landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

582C2—Homen silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits, shoulders, and backslopes

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Homen and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Homen soil
- Soils that contain more clay in the subsoil than the Homen soil
- Areas of soils that are severely eroded

Dissimilar soils:
- The somewhat poorly drained Marine soils in the less sloping landform positions
- The well drained Ruma soils in the more convex landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

5582B—Homen silt loam, karst, 2 to 5 percent slopes

Setting

Landform: Karst terrain on loess-covered till plains
Position on the landform: Narrow summits and side slopes of conical depressions

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Homen and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Homen soil
- Soils that contain more clay in the subsoil than the Homen soil
- Areas of soils that are moderately eroded

Dissimilar soils:
- The somewhat poorly drained Marine soils on the less sloping summits
- The well drained Ruma soils in the more convex landform positions
- The somewhat poorly drained Wakeland soils on the bottom of sinkholes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

5582C—Homen silt loam, karst, 5 to 12 percent slopes, eroded

Setting

Landform: Karst terrain on loess-covered till plains
Position on the landform: Narrow summits and side slopes of conical depressions

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Homen and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that contain more clay in the surface layer than the Homen soil
- Areas of soils that are severely eroded

Dissimilar soils:
- The well drained Ruma soils in the more convex landform positions
- The somewhat poorly drained Wakeland soils on the bottom of sinkholes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Hurst Series

Taxonomic classification: Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs

Typical Pedon for MLRA 114

Hurst silt loam, in a nearly level area in a cultivated field, at an elevation of about 385 feet above mean sea level; about 3 miles east of Hurst, in Williamson County, Illinois; approximately 1,490 feet north and 1,200 feet west of the southeast corner of sec. 10, T. 8 S., R. 1 E.; USGS Herrin, Illinois, topographic quadrangle; lat. 37 degrees 50 minutes 15 seconds N. and long. 89 degrees 04 minutes 48 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; many very fine roots; common fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with sharp boundaries; about 21 percent clay; slightly acid; abrupt smooth boundary.

E—7 to 12 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; moderate medium platy structure parting to weak fine subangular blocky; friable; common very fine roots; many fine faint light brownish gray (10YR 6/2) iron depletions and common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with sharp boundaries; about 22 percent clay; strongly acid; clear smooth boundary.

Bt1—12 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common very fine roots; common continuous distinct brown (10YR 4/3) clay films on faces of peds; many continuous prominent very pale brown (10YR 8/2) clay depletions on faces of peds; many fine and medium distinct light brownish gray (10YR 6/2) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine rounded very dark brown (7.5YR 2.5/2) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; about 30 percent clay; very strongly acid; clear smooth boundary.

2Bt2—18 to 28 inches; brown (10YR 5/3) silty clay;

weak fine prismatic structure parting to weak medium angular blocky; very firm; common very fine roots; common continuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine faint grayish brown (10YR 5/2) iron depletions and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation with clear boundaries; about 43 percent clay; very strongly acid; gradual smooth boundary.

2Btg1—28 to 40 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure parting to weak medium angular blocky; very firm; few very fine roots; common continuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds and few continuous prominent brown (10YR 4/3) clay films lining large channels; few fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation with clear boundaries; about 38 percent clay; very strongly acid; clear smooth boundary.

2Btg2—40 to 53 inches; grayish brown (2.5Y 5/2) silty clay; weak medium prismatic structure parting to weak medium angular blocky; very firm; few very fine roots; common continuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common continuous prominent black (N 2.5/0) iron-manganese coatings on faces of peds and lining large channels; few fine prominent yellowish brown (10YR 5/6) and common fine distinct dark brown (10YR 3/3) masses of iron accumulation in the matrix; about 46 percent clay; moderately acid; clear smooth boundary.

2Btg3—53 to 62 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to weak coarse angular blocky; firm; few very fine roots; common continuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many coarse irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation with clear strong brown (7.5YR 5/6) boundaries; about 37 percent clay; slightly effervescent; slightly alkaline; clear smooth boundary.

2BCkg—62 to 76 inches; olive gray (5Y 4/2) silty clay; weak medium prismatic structure parting to moderate medium angular blocky; very firm; few very fine roots; common continuous distinct olive gray (5Y 4/2) pressure faces on faces of peds; common continuous distinct very dark brown (7.5YR 2.5/3) iron-manganese coatings on faces of peds and lining large channels; few fine prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine irregular black (7.5YR 2.5/1) and strong brown (7.5YR 5/6) masses of iron accumulation with diffuse boundaries; common fine and medium irregular white (10YR 8/1) (dry) carbonate concretions; about 45 percent clay; strongly effervescent; slightly alkaline; clear smooth boundary.

2Cg—76 to 80 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; few continuous distinct dark grayish brown (10YR 4/2) clay films lining vertical channels; common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation along vertical channels; few fine prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common fine irregular very dark brown (7.5YR 2.5/2) masses of iron-manganese accumulation with diffuse strong brown (7.5YR 5/6) boundaries; about 33 percent clay; slightly alkaline.

Range in Characteristics

Depth to the base of the argillic horizon: 44 to more than 80 inches

Thickness of the loess or other silty material: 0 to 24 inches

Depth to carbonates (if they occur): Carbonates are in the lower part of the 2B horizon or in the 2BC and 2C horizons.

Other features: Some pedons, especially pedons that have a loess cap nearly 24 inches thick, have a BE or Bt horizon that formed in the upper, silty material. A sandy substratum phase of loamy sand or sand is recognized.

Ap or A horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 or 3
Texture—silt loam or silty clay loam

E horizon (if it occurs):
Hue—10YR
Value—5 or 6 (6 to 8 dry)
Chroma—2 (3 in pedons that have redoximorphic features)
Texture—silt loam or silty clay loam

2Bt and 2Btg horizons:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6

Chroma—3 or 4 (2Bt); 1 or 2 (2Btg)
Texture—silty clay loam, silty clay, or clay

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam or silty clay; stratified in some pedons

8338B—Hurst silt loam, 2 to 5 percent slopes, occasionally flooded

Setting

Landform: Lake plains
Position on the landform: Treads

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Clayey lacustrine sediments
Flooding frequency: Occasional

Map Unit Composition

Hurst and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner subsoil than that of the Hurst soil and contain carbonates higher in the profile
- Soils that are moderately eroded; near the edge of the mapped areas
- Areas of soils that are more sloping or less sloping than the Hurst soil

Dissimilar soils:
- The poorly drained Okaw soils in nearly level areas
- The moderately well drained Colp soils in the higher, more convex landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Lacrescent Series

Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic Typic Hapludolls

Typical Pedon for MLRA 115B

Lacrescent flaggy silt loam, on a convex, west-facing slope of 55 percent, in an area of mixed hardwoods at the base of a limestone bluff, at an elevation of about 415 feet above mean sea level; about 2 miles southeast of Fults, in Monroe County, Illinois; approximately 65 feet northeast of Bluff Road and 850 feet southeast of a small drainage ditch; T. 4 S., R. 10 W.; USGS Renault, Illinois, topographic quadrangle: lat. 38 degrees 08 minutes 27 seconds N. and long. 90 degrees 10 minutes 48 seconds W., NAD 27:

A1—0 to 6 inches; black (10YR 2/1) flaggy silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; many very fine and fine and common medium and coarse roots; about 20 percent flaggy and channery limestone fragments; slightly effervescent; neutral; clear wavy boundary.

A2—6 to 14 inches; black (10YR 2/1) flaggy silt loam, dark gray (10YR 4/1) dry; weak medium granular structure; friable; common very fine and fine and few medium and coarse roots; about 30 percent flaggy and channery limestone fragments; strongly effervescent; slightly alkaline; clear wavy boundary.

AB—14 to 19 inches; very dark grayish brown (10YR 3/2) very flaggy silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; common very fine and fine and few medium and coarse roots; about 45 percent flaggy and channery limestone fragments; strongly effervescent; slightly alkaline; clear wavy boundary.

Bw—19 to 32 inches; brown (10YR 4/3) very flaggy loam; weak fine subangular blocky structure; friable; common very fine and fine and few medium roots; few faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; about 50 percent flaggy and channery limestone fragments; strongly effervescent; slightly alkaline; gradual wavy boundary.

C—32 to 60 inches; brown (10YR 5/3) extremely flaggy loam; massive; friable; common very fine and fine and few medium roots; about 65 percent flaggy and channery limestone fragments; violently effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of soil development: 20 to 36 inches
Depth to bedrock: 3.5 to 12 feet; commonly 5 to 8 feet
Thickness of the loess (or mixture of loess and loamy colluvium): 5 to 20 inches
Thickness of the mollic epipedon: 10 to 20 inches

Content of rock fragments in the particle-size control section: 35 to 70 percent
Depth to carbonates: 20 to 36 inches

A horizon and AB horizon (if it occurs):
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 to 3
Texture—silt loam, loam, or silty clay loam or the flaggy or very flaggy analogs of these textures

Bw horizon:
Hue—10YR
Value—4
Chroma—3 or 4
Texture—typically very flaggy loam or extremely flaggy loam; the range includes the very flaggy, extremely flaggy, cobbly, or very cobbly analogs of silt loam, sandy loam, and fine sandy loam

C horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—the very flaggy, extremely flaggy, or very cobbly analogs of loam, fine sandy loam, or silt loam

785G—Lacrescent flaggy silt loam, 35 to 70 percent slopes

Setting

Landform: Limestone bluffs
Position on the landform: Steep and very steep, convex footslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Mixture of loess and loamy-skeletal colluvium weathered from limestone
Flooding: None

Map Unit Composition

Lacrescent and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that have bedrock within a depth of 40 inches
- Soils that contain more stones and boulders than the Lacrescent soil
- Areas of soils that are more sloping than the Lacrescent soil

Dissimilar components:
- The well drained Drury soils on the lower footslopes
- Limestone bedrock ledges and escarpments

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Landes Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Fluventic Hapludolls

Typical Pedon for MLRA 114 and MLRA 115B

Landes very fine sandy loam, in a gently sloping area in a cultivated field, at an elevation of about 400 feet above mean sea level; about 3 miles northwest of New Hanover, in Monroe County, Illinois; approximately 1,740 feet south and 2,800 feet west of the intersection of railroad tracks and Steppig Road, sec. 25, T. 1 S., R. 11 W.; USGS Oakville, Missouri-Illinois, topographic quadrangle; lat. 38 degrees 24 minutes 57 seconds N. and long. 90 degrees 16 minutes 02 seconds W., NAD 27:

Ap—0 to 10 inches; very dark gray (10YR 3/1) very fine sandy loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many very fine and few fine roots; few very fine tubular pores; slightly acid; abrupt smooth boundary.
A—10 to 14 inches; very dark gray (10YR 3/1) very fine sandy loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure; very friable; common very fine and few fine roots; common very fine and fine tubular pores; common faint black (10YR 2/1) organic coatings on faces of peds; neutral; clear smooth boundary.
AB—14 to 18 inches; dark brown (10YR 3/3) very fine sandy loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; very friable; common very fine roots and few fine roots; few very fine tubular pores; few distinct black (10YR 2/1) organic coatings on faces of peds; neutral; clear smooth boundary.
Bw1—18 to 30 inches; brown (10YR 4/3) very fine sandy loam; weak fine subangular blocky structure; very friable; few very fine and fine roots;

common very fine and fine tubular pores; few faint dark brown (10YR 3/3) organo-clay films on faces of peds; neutral; gradual smooth boundary.

Bw2—30 to 39 inches; brown (10YR 4/3) very fine sandy loam; weak medium subangular blocky structure; very friable; few very fine and fine roots; few very fine tubular pores; few distinct brown (10YR 4/3) clay films in root channels and in pores; neutral; gradual smooth boundary.

BC—39 to 47 inches; brown (10YR 4/3) loamy very fine sand; weak medium subangular blocky structure; very friable; few very fine roots; slightly acid; clear smooth boundary.

C—47 to 80 inches; brown (10YR 5/3) very fine sand; single grain; loose; few very fine roots; neutral.

Range in Characteristics

Depth to the base of the cambic horizon: 22 to 40 inches
Thickness of the mollic epipedon: 10 to 20 inches
Content of sand in the particle-size control section: 50 to 90 percent sand (dominantly fine sand or very fine sand)
Depth to carbonates (if they occur): 0 to 40 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 to 3
Texture—fine sandy loam or very fine sandy loam

Bw horizon and BC horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—loam, fine sandy loam, very fine sandy loam, sandy loam, loamy fine sand, or loamy very fine sand; stratified in many pedons
Content of rock fragments—0 to 10 percent fine gravel

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—1 to 4
Texture—sand, fine sand, very fine sand, loamy sand, loamy fine sand, loamy very fine sand, sandy loam, fine sandy loam, very fine sandy loam, loam, or silt loam; stratified in many pedons
Content of rock fragments—0 to 10 percent fine gravel

8304B—Landes very fine sandy loam, 2 to 5 percent slopes, occasionally flooded

Setting

Landform: Flood plains
Position on the landform: Natural levees and low terraces

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loamy and sandy alluvium
Flooding frequency: Occasional

Map Unit Composition

Landes and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain more or less sand throughout than the Landes soil
- Soils that contain more clay in the substratum than the Landes soil

Dissimilar soils:
- The somewhat poorly drained Nameoki and Shaffton soils in the lower landform positions
- The poorly drained Fults soils in depressions and along drainageways

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Marine Series

Taxonomic classification: Fine, smectitic, mesic Aeric Albaqualfs

Typical Pedon for MLRA 114

Marine silt loam, on a slope of 1 percent on a broad, slightly convex summit in a cultivated field, at an elevation of about 500 feet above sea level; about 3 miles south of Highland, in Madison County, Illinois; approximately 2,030 feet east and 650 feet south of the northwest corner of sec. 21, T. 3 N., R. 5 W.; USGS

St. Jacob, Illinois, topographic quadrangle; lat. 38 degrees 41 minutes 18 seconds N. and long. 89 degrees 46 minutes 14 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; many very fine roots; few very fine continuous tubular pores; few fine rounded black (N 2.5/0) iron-manganese nodules with sharp boundaries; strongly acid; abrupt smooth boundary.

E—9 to 17 inches; light brownish gray (10YR 6/2) silt loam, white (10YR 8/1) dry; weak thin platy structure; friable; common very fine roots; few very fine continuous pores; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine rounded black (N 2.5/0) iron-manganese nodules with sharp boundaries; very strongly acid; abrupt smooth boundary.

Bt1—17 to 25 inches; brown (10YR 4/3) silty clay; moderate medium prismatic structure parting to strong fine angular blocky; very firm; common very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; very strongly acid; clear smooth boundary.

Bt2—25 to 34 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few very fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine distinct grayish brown (2.5Y 5/2) iron depletions and common medium prominent brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; common fine and medium rounded dark reddish brown (5YR 2.5/2) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; very strongly acid; clear smooth boundary.

Btg1—34 to 43 inches; grayish brown (10YR 5/2) silty clay loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common medium prominent light olive brown (2.5Y 5/4) and common coarse prominent brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; few medium rounded black (N 2.5/0) iron-manganese nodules with strong brown (7.5YR 4/6) boundaries; very strongly acid; clear smooth boundary.

Btg2—43 to 52 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak coarse prismatic structure; firm; few very fine roots; many faint grayish brown (2.5Y 5/2) clay films on faces of peds; common coarse prominent brownish yellow (10YR 6/8) and common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine and medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; slightly acid; gradual smooth boundary.

BCtg—52 to 62 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse subangular blocky structure; friable; few faint grayish brown (2.5Y 5/2) clay films on vertical faces of peds and few distinct dark grayish brown (10YR 4/2) clay films in root channels and in pores; common coarse prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine and medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; slightly acid; gradual smooth boundary.

2C—62 to 80 inches; brown (7.5YR 5/3) silt loam; massive; friable; many medium faint brown (7.5YR 5/2) iron depletions and many coarse distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (10YR 2/1) iron-manganese nodules with sharp boundaries; about 8 percent sand; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 42 to more than 80 inches

Thickness of the loess: 55 to more than 80 inches

Texture of the particle-size control section: Averages between 35 and 48 percent clay and less than 7 percent sand

Other features: Some pedons have a B/E horizon, which is about 2 or 3 inches thick. In pedons that have less than 80 inches of loess, the lower part of the soil formed in silty pedisediment that contains a component of sand and/or in the underlying Illinoian till that commonly contains a strongly developed paleosol. These horizons or strata typically are silt loam, loam, silty clay loam, or clay loam.

Ap horizon:

Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 or 3
Texture—silt loam

E horizon:
Hue—10YR
Value—5 to 7 (6 to 8 dry)
Chroma—1 or 2
Texture—silt or silt loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—3 or 4
Texture—silty clay loam or silty clay

Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 or 2
Texture—silty clay loam or silty clay; grades to silt loam in the lower part in some pedons

BCg or BCtg horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 or 2
Texture—silty clay loam or silt loam

C or 2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 to 7
Chroma—1 to 3
Texture—silt loam or loam

517A—Marine silt loam, 0 to 2 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Slightly convex summits

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Marine and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that contain less clay in the subsoil than the Marine soil
• Soils that contain a concentration of exchangeable sodium in the subsoil
• Soils that do not have an abrupt textural change between the subsurface layer and the subsoil

Dissimilar soils:
• The poorly drained Pierron soils at the head of drainageways and in slight depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• “Crops and Pasture”
• “Forestland Management and Productivity”
• “Wildlife Habitat”
• “Engineering” and “Soil Properties”

517B—Marine silt loam, 2 to 5 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Marine and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that contain less clay in the subsoil than the Marine soil
• Soils that contain a concentration of exchangeable sodium in the subsoil
• Soils that do not have an abrupt textural change between the subsurface layer and the subsoil
• Areas of soils that are moderately eroded

Dissimilar soils:
• The poorly drained Pierron soils at the head of drainageways and in slight depressions
• The moderately well drained Homen soils in the more convex landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Meadowbank Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon for MLRA 114

Meadowbank silt loam, in a gently sloping area in a cultivated field, at an elevation of about 410 feet above mean sea level; about 2 miles southeast of New Memphis, in Clinton County, Illinois; approximately 700 feet west and 100 feet north of the southeast corner of sec. 7, T. 1 S., R. 5 W.; USGS Venedy, Illinois, topographic quadrangle; lat. 38 degrees 27 minutes 07 seconds N. and long. 89 degrees 41 minutes 21 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many very fine and few fine roots; 15 percent clay and 20 percent sand; slightly acid; clear smooth boundary.

A—9 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; common very fine and few fine roots; 19 percent clay and 19 percent sand; neutral; clear smooth boundary.

AB—13 to 17 inches; dark brown (10YR 3/3) silt loam, brown (10YR 4/3) dry; moderate medium subangular blocky structure; friable; few very fine roots; few faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 23 percent clay and 18 percent sand; neutral; clear smooth boundary.

Bt1—17 to 25 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 29 percent clay and 14 percent sand; neutral; clear smooth boundary.

Bt2—25 to 34 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 31 percent clay and 17 percent sand; slightly acid; clear smooth boundary.

2Bt3—34 to 40 inches; dark yellowish brown (10YR 4/4) loam; moderate medium prismatic structure; friable; few very fine roots; common distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; 24 percent clay and 37 percent sand; slightly acid; clear smooth boundary.

2Bt4—40 to 45 inches; dark yellowish brown (10YR 4/4) sandy loam; moderate medium prismatic structure; friable; few very fine roots; common distinct dark brown (7.5YR 3/3) organo-clay films on faces of peds; 17 percent clay and 56 percent sand; moderately acid; clear smooth boundary.

2BCt—45 to 53 inches; brown (7.5YR 4/4) sandy loam; weak medium and coarse prismatic structure; friable; few very fine roots; few distinct dark brown (7.5YR 3/3) organo-clay films on faces of peds; 13 percent clay and 72 percent sand; moderately acid; clear smooth boundary.

2E&Bt—53 to 80 inches; dark yellowish brown (10YR 4/4) loamy sand (E); brown (7.5YR 4/4) lamellae of sandy loam (Bt); single grain (E); loose (E); massive (Bt); very friable (Bt); few very fine roots; common distinct dark brown (7.5YR 3/4) clay bridges (Bt); individual lamellae are 1/2 inch to 2 inches thick; the thicker lamellae have weak medium blocky structure; the combined thickness of the lamellae is about 8 inches; slightly acid.

Range in Characteristics

Depth to the base of the argillic horizon: 50 to more than 80 inches
Thickness of the mollic epipedon: 10 to 19 inches
Thickness of the loess or other silty material: 24 to 40 inches
Content of rock fragments: 0 to 10 percent, by volume, in the 2Bt and 2E&Bt horizons
Depth to carbonates (if they occur): More than 72 inches
Other features: Some pedons have a 2C horizon within a depth of 80 inches.

Ap, A, and AB horizons:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5

Chroma—4 to 6
Texture—clay loam, loam, or sandy loam

2E&Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—sandy loam, loamy sand, or sand

8436B—Meadowbank silt loam, 2 to 5 percent slopes, occasionally flooded

Setting

Landform: High flood plains

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess or other silty material overlying loamy or sandy outwash
Flooding frequency: Occasional

Map Unit Composition

Meadowbank and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a light-colored surface layer
- Soils that contain more sand in the surface layer than the Meadowbank soil
- Areas of soils that have short, steep terrace risers and that are commonly eroded

Dissimilar soils:
- The somewhat poorly drained Wakeland soils along drainageways
- Poorly drained and somewhat poorly drained soils in slight depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Menfro Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon for MLRA 115B

Menfro silt loam, in a gently sloping area in a cultivated field, at an elevation of about 560 feet above mean sea level; about 1.5 miles northwest of O’Fallon, in St. Clair County, Illinois; approximately 1,500 feet north and 1,500 feet east of the center of sec. 24, T. 2 N., R. 8 W.; USGS O’Fallon, Illinois, topographic quadrangle; lat. 38 degrees 36 minutes 42 seconds N. and long. 89 degrees 55 minutes 58 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate very fine granular structure; friable; many very fine and few fine roots; about 22 percent clay; moderately acid; abrupt smooth boundary.

E—7 to 10 inches; yellowish brown (10YR 5/4) silt loam, light yellowish brown (10YR 6/4) dry; moderate medium platy structure parting to moderate very fine subangular blocky; friable; common very fine roots; common fine continuous tubular pores; about 24 percent clay; moderately acid; abrupt smooth boundary.

Bt1—10 to 18 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; common very fine roots; few fine continuous tubular pores; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; about 32 percent clay; moderately acid; clear smooth boundary.

Bt2—18 to 35 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common very fine roots; few fine continuous tubular pores; many distinct brown (10YR 4/3) clay films on faces of peds; about 31 percent clay; moderately acid; gradual smooth boundary.

Bt3—35 to 50 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; few very fine and fine continuous tubular pores; common distinct brown (10YR 4/3) clay films on faces of peds; about 30 percent clay; moderately acid; gradual smooth boundary.

Bt4—50 to 62 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium subangular blocky structure; friable; few very fine roots; few very fine and fine vesicular and tubular pores; few distinct brown (10YR 4/3) clay films on vertical faces of peds; about 28 percent clay; moderately acid; gradual smooth boundary.

BC—62 to 70 inches; dark yellowish brown (10YR 4/4) silt loam; weak coarse subangular blocky

structure; friable; few very fine roots; common very fine and fine vesicular and tubular pores; few distinct brown (10YR 4/3) clay films lining root channels and pores; about 24 percent clay; slightly acid; gradual smooth boundary.

C—70 to 80 inches; dark yellowish brown (10YR 4/4) silt loam; massive; very friable; few very fine roots; common very fine and fine vesicular and tubular pores; very few faint brown (10YR 4/3) clay films lining root channels and pores; about 20 percent clay; slightly acid.

Range in Characteristics

Thickness of the solum: 30 to 100 inches; typically 50 to 70 inches
Thickness of the loess: 6 to more than 20 feet
Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand
Other features: Pedons in undisturbed areas have an A horizon. This horizon is 1 to 4 inches thick.

Ap horizon:
Hue—10YR
Value—3 to 5 (6 or 7 dry)
Chroma—2 to 4
Texture—silt loam

A horizon (if it occurs):
Hue—10YR
Value—2 to 4 (4 to 6 dry)
Chroma—2 or 3

E horizon (if it occurs):
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—3 or 4
Texture—silt loam

BE horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silty clay loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam

C horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silty clay loam

79B—Menfro silt loam, 2 to 5 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Menfro and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Menfro soil
- Soils that contain carbonates in the substratum
- Soils that are moderately eroded; near the edge of the mapped areas

Dissimilar components:
- The somewhat poorly drained Caseyville soils in depressions at the head of drainageways
- Areas where the natural soil has been disturbed by development

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

79C2—Menfro silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits, shoulders, and backslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Menfro and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
• Soils that contain less clay in the subsoil than the Menfro soil
• Soils that contain carbonates in the substratum
• Areas of soils that are severely eroded

Dissimilar components:
• The somewhat poorly drained Caseyville soils in depressions at the head of drainageways
• Areas where the natural soil has been disturbed by development

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• "Crops and Pasture"
• "Forestland Management and Productivity"
• "Wildlife Habitat"
• "Engineering" and "Soil Properties"

79D3—Menfro silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Erosional side slopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Menfro and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
• Soils that contain less clay in the subsoil than the Menfro soil
• Soils that contain carbonates in the substratum
• Areas of soils that are less eroded than the Menfro soil

Dissimilar components:
• The moderately well drained Winfield soils; in landform positions similar to those of the Menfro soil
• Areas where the natural soil has been disturbed by development

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• "Crops and Pasture"
• "Forestland Management and Productivity"
• "Wildlife Habitat"
• "Engineering" and "Soil Properties"

79F—Menfro silt loam, 18 to 35 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Side slopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Menfro and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
• Soils that contain less clay in the subsoil than the Menfro soil
• Soils that contain carbonates in the substratum
• Areas of soils that are eroded

Dissimilar components:
• Areas that have rock outcrop at the base of slopes
• Areas where the natural soil has been disturbed by development

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• "Crops and Pasture"
• "Forestland Management and Productivity"
• "Wildlife Habitat"
• "Engineering" and "Soil Properties"

79F3—Menfro silty clay loam, 18 to 35 percent slopes, severely eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Erosional side slopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Menfro and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Menfro soil
- Soils that contain carbonates in the substratum
- Areas of soils that are less eroded than the Menfro soil

Dissimilar components:
- Areas that have rock outcrop at the base of slopes
- Areas where the natural soil has been disturbed by development

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

5079B—Menfro silt loam, karst, 2 to 5 percent slopes, eroded

Setting

Landform: Karst terrain on loess-covered till plains
Position on the landform: Narrow summits between sinkholes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Menfro and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Menfro soil
- Soils that contain carbonates in the substratum
- Soils that are severely eroded; near the edge of the mapped areas

Dissimilar components:
- The moderately well drained Winfield soils on the less sloping or less convex summits
- Areas where the natural soil has been disturbed by development

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

5079C—Menfro silt loam, karst, 5 to 12 percent slopes, severely eroded

Setting

Landform: Karst terrain on loess-covered till plains
Position on the landform: Convex summits between sinkholes and side slopes of the conical depressions

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Menfro and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Menfro soil

- Soils that contain carbonates in the substratum
- Areas of soils that are less eroded than the Menfro soil

Dissimilar components:
- The somewhat poorly drained Wakeland soils on the bottom of the sinkholes
- Areas where the natural soil has been disturbed by development

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

5079D—Menfro silt loam, karst, 12 to 25 percent slopes, severely eroded

Setting

Landform: Karst terrain on loess-covered till plains (fig. 4)
Position on the landform: Convex summits between sinkholes and side slopes of the conical depressions

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Menfro and similar soils: 90 percent
Dissimilar components: 10 percent

Figure 4.—A sinkhole in a wheat field in an area of Menfro silt loam, karst, 12 to 25 percent slopes, severely eroded.

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Menfro soil
- Soils that contain carbonates in the substratum
- Areas of soils that are less eroded than the Menfro soil

Dissimilar components:
- The somewhat poorly drained Wakeland soils on the bottom of the sinkholes
- Areas where the natural soil has been disturbed by development

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

5079G—Menfro silt loam, karst, 25 to 60 percent slopes

Setting

Landform: Karst terrain on loess-covered till plains
Position on the landform: Convex summits between sinkholes and side slopes of the conical depressions (fig. 5)

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Menfro and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Menfro soil
- Soils that contain carbonates in the substratum
- Areas of soils that are eroded

Dissimilar components:
- The somewhat poorly drained Wakeland soils on the bottom of the sinkholes
- Many areas where bedrock is exposed; near the bottom of the sinkholes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Millstadt Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Epiaqualfs

Typical Pedon

Millstadt silt loam, in a nearly level area on a lacustrine terrace tread, in a cultivated field, at an elevation of about 412 feet above mean sea level; about 1.5 mile south of New Athens, in St. Clair County, Illinois; approximately 2,200 feet east and 2,380 feet south of the northwest corner of sec. 4, T. 3 S., R. 7 W.; USGS New Athens West, Illinois, topographic quadrangle; lat. 38 degrees 18 minutes 05 seconds N. and long. 89 degrees 52 minutes 57 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many very fine roots throughout; few fine and medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; about 20 percent clay; neutral; abrupt smooth boundary.

E—9 to 14 inches; pale brown (10YR 6/3) silt loam, very pale brown (10YR 7/3) dry; moderate medium platy structure parting to weak fine granular; friable; common very fine roots throughout; few distinct very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; few fine faint light brownish gray (10YR 6/2) iron depletions in the matrix; common fine and medium rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; about 22 percent clay; slightly acid; clear smooth boundary.

EB—14 to 18 inches; pale brown (10YR 6/3) silt loam, very pale brown (10YR 7/3) dry; moderate fine subangular blocky structure; friable; common very fine roots between peds; many distinct very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; common fine faint light brownish gray (10YR 6/2) iron depletions and few fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common fine and medium rounded black (7.5YR 2.5/1) iron-

Figure 5.—A forested side slope of a sinkhole in an area of Menfro silt loam, karst, 25 to 60 percent slopes.

manganese nodules with clear strong brown (7.5YR 5/6) boundaries; about 26 percent clay; very strongly acid; clear smooth boundary.

Bt1—18 to 28 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots between peds; many continuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; about 33 percent clay; very strongly acid; clear smooth boundary.

Bt2—28 to 38 inches; brown (10YR 5/3) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots between peds; common continuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; about 31 percent clay; very strongly acid; gradual smooth boundary.

Bt3—38 to 53 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots between peds; common continuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine and medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown

(7.5YR 5/6) boundaries; about 30 percent clay; strongly acid; clear smooth boundary.

2Btg1—53 to 62 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots between peds; few discontinuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; about 38 percent clay; moderately acid; abrupt smooth boundary.

2Btg2—62 to 67 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; friable; common discontinuous distinct (10YR 4/2) clay films on faces of peds; few fine faint light brownish gray (2.5Y 6/2) iron depletions and common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation; about 30 percent clay and 10 percent sand; slightly acid; abrupt smooth boundary.

2Btg3—67 to 80 inches; grayish brown (2.5Y 5/2) silty clay; weak medium prismatic structure parting to moderate fine and medium angular blocky; very firm; common discontinuous distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint light brownish gray (2.5Y 6/2) iron depletions and common medium prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation; about 42 percent clay; slightly effervescent; neutral; clear smooth boundary.

2Btkg—80 to 100 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few continuous distinct very dark grayish brown (10YR 3/2) organo-clay films lining root channels; common discontinuous distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common fine prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine irregular black (10YR 2/1) masses of iron-manganese accumulation and few fine irregular white (10YR 8/1) (dry) masses of carbonate accumulation; several thin strata of brown (10YR 4/3) silt loam; about 38 percent clay; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to the base of the argillic horizon: 60 to more than 80 inches
Thickness of the loess: Typically 36 to about 70 inches
Depth to carbonates (if they occur): More than 48 inches

Ap horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 or 3
Texture—silt loam

E horizon and EB horizon (if it occurs):
Hue—10YR
Value—4 to 6 (6 to 8 dry)
Chroma—2 or 3
Texture—silt loam or silty clay loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam

2Bt horizon and 2BC and 2C horizons (if they occur):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—2 to 4
Texture—clay, silty clay, silty clay loam, or silt loam

423A—Millstadt silt loam, 0 to 2 percent slopes

Setting

Landform: Lacustrine terraces
Position on the landform: Treads

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess and the underlying clayey lacustrine sediments
Flooding: None

Map Unit Composition

Millstadt and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a darker surface layer than that of the Millstadt soil

• Soils that contain more clay in the subsoil than the Millstadt soil
• Soils that have an abrupt textural change between the subsurface layer and the subsoil

Dissimilar soils:
• The moderately well drained Redbud soils in the higher, more convex landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Nameoki Series

Taxonomic classification: Fine, smectitic, mesic Aquertic Hapludolls

Typical Pedon for MLRA 115B

Nameoki silty clay, on a slope of 1 percent, on a gently undulating flood plain in a cultivated field, at an elevation of about 410 feet above mean sea level; about 1.5 miles northwest of Mitchell, in Madison County, Illinois; approximately 1,900 feet south and 1,930 feet east of the northwest corner of sec. 28, T. 4 N., R. 9 W.; USGS Wood River, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 46 minutes 07 seconds N. and long. 90 degrees 06 minutes 28 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silty clay, dark grayish brown (10YR 4/2) dry; moderate fine angular blocky structure; firm; common very fine roots; neutral; abrupt smooth boundary.

A—8 to 12 inches; very dark grayish brown (10YR 3/2) silty clay, dark grayish brown (10YR 4/2) dry; strong fine angular blocky structure; very firm; common very fine roots; common faint very dark grayish brown (10YR 3/2) pressure faces on faces of peds; neutral; clear smooth boundary.

Bw1—12 to 16 inches; very dark grayish brown (10YR 3/2) silty clay, grayish brown (10YR 5/2) dry; strong fine and medium angular blocky structure; very firm; few very fine roots; many distinct very dark grayish brown (10YR 3/2) pressure faces on faces of peds; few fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Bw2—16 to 28 inches; brown (10YR 4/3) silty clay; moderate fine prismatic structure parting to strong fine and medium angular blocky; very firm; few very fine roots; many distinct dark grayish brown (10YR 4/2) pressure faces on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and few fine faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

2Btg1—28 to 41 inches; dark grayish brown (10YR 4/2), stratified clay loam and silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; common very fine roots; common very fine and fine continuous tubular pores; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine prominent dark yellowish brown (10YR 4/6) and few fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; slightly acid; gradual smooth boundary.

2Btg2—41 to 48 inches; dark grayish brown (10YR 4/2), stratified silt loam and silty clay loam; weak medium prismatic structure parting to weak fine and medium subangular blocky; firm; common very fine roots; few very fine and fine continuous tubular pores; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine prominent yellowish brown (10YR 5/6) and few fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; common fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; neutral; clear smooth boundary.

2BCg—48 to 54 inches; dark grayish brown (2.5Y 4/2), stratified silt loam and loam; weak medium subangular blocky structure; friable; few very fine roots; common fine and medium continuous tubular pores; few distinct very dark grayish brown (10YR 3/2) organo-clay films lining root channels and pores; common medium faint olive brown (2.5Y 4/3) masses of iron accumulation in the matrix; common fine irregular brown (7.5YR 4/4) masses of iron-manganese accumulation; neutral; gradual smooth boundary.

2Cg—54 to 72 inches; grayish brown (2.5Y 5/2), stratified silt loam and very fine sandy loam; massive; very friable; few very fine roots; common very fine and fine tubular and vesicular pores; common fine faint olive brown (2.5Y 4/3) masses of iron accumulation in the matrix; few fine irregular brown (7.5YR 4/4) masses of iron-manganese accumulation; neutral; abrupt smooth boundary.

2Ckg—72 to 80 inches; grayish brown (2.5Y 5/2), stratified very fine sandy loam and silt loam; massive; friable; few very fine and fine vesicular pores; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular light gray (10YR 7/2) masses of carbonate accumulation and few medium irregular light brownish gray (10YR 6/2) carbonate concretions; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to the base of soil development: 40 to about 72 inches
Thickness of the mollic epipedon: 10 to 20 inches; the mollic epipedon extends into the upper part of the B horizon in many pedons
Depth to the loamy 2B horizon: 24 to 40 inches
Depth to carbonates: These soils typically do not have carbonates within the particle-size control section, but some pedons contain carbonates in the loamy alluvium.
Other features: Some pedons have an AB or a BA horizon.

Ap and A horizons:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 or 2
Texture—silty clay loam, silty clay, or clay

Bw or Bg horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 4
Texture—silty clay or clay; some subhorizons are silty clay loam or clay loam with more than 35 percent clay

2Btg, 2Bg, or 2Bw horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4 in the upper part; 1 to 4 in the lower part
Texture—silt loam, loam, silty clay loam, clay loam, sandy loam, fine sandy loam, or very fine sandy loam; typically stratified

2Cg, 2Ckg, or 2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 3
Texture—stratified; individual strata range from silty clay loam to very fine sand

8592A—Nameoki silty clay, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Gently undulating flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Slackwater sediments and the underlying stratified loamy or sandy alluvium
Flooding frequency: Occasional

Map Unit Composition

Nameoki and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a thinner dark surface layer than that of the Nameoki soil
- Soils that contain more sand in the subsoil than the Nameoki soil
- Soils that contain carbonates in the subsoil

Dissimilar soils:
- The poorly drained Ambraw and Fults soils in the lower landform positions
- The well drained Landes soils on the higher natural levees

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Neotoma Series

Taxonomic classification: Loamy-skeletal, mixed, active, mesic Ultic Hapludalfs

Typical Pedon for MLRA 114 and MLRA 115B

Neotoma flaggy silt loam, in an area of Westmore-Neotoma complex, 18 to 35 percent slopes; on a southwest-facing slope of 27 percent, in an area of mixed hardwoods, at an elevation of about 590 feet above mean sea level; about 2.5 miles northwest of Ames, in Monroe County, Illinois; approximately 1,100 feet south and 2,430 feet west of the northeast corner

of sec. 20, T. 4 S., R. 9 W.; USGS Ames, Illinois, topographic quadrangle; lat. 38 degrees 10 minutes 36 seconds N. and long. 90 degrees 07 minutes 05 seconds W., NAD 27:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) flaggy silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; common fine roots; about 15 percent flagstones and 5 percent channers; neutral; abrupt smooth boundary.

E—3 to 7 inches; brown (10YR 5/3) very flaggy silt loam, very pale brown (10YR 7/3) dry; weak fine subangular blocky structure; friable; common fine roots; few fine distinct brown (7.5YR 5/4) masses of iron accumulation in the matrix; about 30 percent flagstones and 20 percent channers; moderately acid; abrupt smooth boundary.

BE—7 to 10 inches; strong brown (7.5YR 5/6) extremely flaggy loam; weak fine subangular blocky structure; friable; few very fine roots; about 45 percent flagstones and 25 percent channers; very strongly acid; clear smooth boundary.

Bt1—10 to 15 inches; strong brown (7.5YR 5/6) extremely flaggy fine sandy loam; weak fine subangular blocky structure; friable; few very fine roots; few distinct reddish brown (5YR 5/4) clay films on faces of peds; about 40 percent flagstones and 25 percent channers; very strongly acid; gradual smooth boundary.

Bt2—15 to 25 inches; yellowish red (5YR 5/6) extremely flaggy fine sandy loam; weak fine subangular blocky structure; friable; few very fine roots; few distinct reddish brown (5YR 5/4) clay films on faces of peds; few medium irregular masses of iron-manganese accumulation; about 35 percent flagstones and 25 percent channers; very strongly acid; gradual smooth boundary.

Bt3—25 to 30 inches; strong brown (7.5YR 5/6) extremely flaggy loam; weak fine subangular blocky structure; friable; few very fine roots; common distinct reddish brown (5YR 5/4) clay films on faces of peds; about 40 percent flagstones and 25 percent channers; very strongly acid; gradual smooth boundary.

Bt4—30 to 50 inches; strong brown (7.5YR 5/6) extremely flaggy sandy clay loam; weak fine subangular blocky structure; friable; few very fine roots; common prominent reddish brown (5YR 5/4) clay films on faces of peds; about 35 percent flagstones and 25 percent channers; very strongly acid; gradual smooth boundary.

BCt—50 to 60 inches; strong brown (7.5YR 5/6) very flaggy sandy clay loam; weak medium subangular blocky structure; friable; few distinct reddish brown (5YR 5/4) clay films on faces of peds; about 35 percent flagstones and 15 percent channers; very strongly acid.

Range in Characteristics

Depth to the base of soil development: 36 to more than 60 inches
Depth to hard bedrock: 40 to 80 inches
Content of rock fragments: 15 to 50 percent, by volume, in the upper part of the solum; 50 to 80 percent in the lower part of the solum; and 80 to 90 percent in the substratum (mainly channers or flagstones)
Other features: The bedrock is hard acid sandstone or siltstone and has some widely spaced fractures in the upper part.

A or Ap horizon:
Hue—7.5YR or 10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 or 2
Texture—flaggy silt loam or channery silt loam

E horizon (if it occurs):
Hue—7.5YR or 10YR
Value—5 or 6 (6 to 8 dry)
Chroma—2 to 4
Texture—the flaggy, channery, very flaggy, or very channery analogs of silt loam, loam, sandy loam, or fine sandy loam

BE and Bt horizons:
Hue—5YR, 7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—the channery, very channery, flaggy, very flaggy, extremely channery, or extremely flaggy analogs of silt loam, loam, sandy loam, sandy clay loam, or fine sandy loam

BCt, BC, or C horizon (if it occurs):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—the very channery, very flaggy, extremely channery, or extremely flaggy analogs of loam, sandy loam, or sandy clay loam

Oconee Series

Taxonomic classification: Fine, smectitic, mesic Udollic Endoaqualfs

Typical Pedon for MLRA 114

Oconee silt loam, on a north-facing slope of 4 percent

in a cultivated field, at an elevation of about 560 feet above mean sea level; about 1.5 miles northwest of Grantfork, in Madison County, Illinois; approximately 1,315 feet east and 2,245 feet north of the southwest corner of sec. 29, T. 5 N., R. 5 W.; USGS Grantfork, Illinois, topographic quadrangle; lat. 38 degrees 50 minutes 58 seconds N. and long. 89 degrees 41 minutes 17 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure grading to weak thin platy in the lower part; very friable; common very fine roots; common very fine tubular pores within peds; few fine rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; slightly acid; abrupt smooth boundary.

E1—8 to 12 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; moderate thick platy structure; very friable; few very fine roots; few very fine tubular pores within peds; many distinct brown (10YR 5/3) clay depletions in pores; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine and medium irregular very dark gray (5YR 3/1) iron-manganese nodules with sharp boundaries; moderately acid; clear smooth boundary.

E2—12 to 16 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate fine and medium subangular blocky structure; friable; few very fine roots; common very fine pores within and between peds; many distinct brown (10YR 5/3) clay depletions in pores; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium rounded dark brown (7.5YR 3/2) iron-manganese nodules with clear boundaries; moderately acid; clear smooth boundary.

Bt/E—16 to 21 inches; brown (10YR 5/3) silty clay loam (Bt); strong very fine subangular blocky structure; firm; few very fine roots; common fine pores in the silty material between peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds and many prominent light brownish gray (10YR 6/2) clay depletions on faces of peds and in pores (E); many medium prominent strong brown (7.5YR 5/6) and few fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine and medium rounded dark brown (7.5YR 3/2) iron-manganese nodules with clear boundaries; strongly acid; clear irregular boundary.

Bt—21 to 29 inches; brown (10YR 5/3) silty clay; moderate medium prismatic structure parting to strong fine and medium angular blocky; very firm; few very fine roots between peds; few fine pores between peds; many prominent dark grayish brown (10YR 4/2) clay films on faces of peds; common medium faint grayish brown (10YR 5/2) iron depletions and common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; strongly acid; clear smooth boundary.

Btg1—29 to 38 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots between peds; few fine pores between peds; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium prominent strong brown (7.5YR 5/8) and common coarse prominent brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; common fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; strongly acid; clear smooth boundary.

Btg2—38 to 47 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; few fine pores between peds; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common medium prominent light olive brown (2.5Y 5/6) and yellowish brown (10YR 5/8) and few medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; moderately acid; clear smooth boundary.

Btg3—47 to 58 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak coarse prismatic structure; firm; few fine pores between peds; many prominent very dark grayish brown (10YR 3/2) organo-clay films lining root channels and filling pores; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common medium and coarse prominent brownish yellow (10YR 5/8) and strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common fine and medium irregular black (5YR 2.5/1) iron-

manganese nodules with clear strong brown (7.5YR 5/6) boundaries; moderately acid; clear smooth boundary.

C1—58 to 65 inches; brown (10YR 5/3) silt loam; massive; friable; few vertical cleavage planes; few fine vesicular pores; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of cleavage planes; many medium prominent yellowish brown (10YR 5/8) and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine and medium irregular black (5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; slightly acid; gradual smooth boundary.

C2—65 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common fine and medium vesicular pores; few prominent very dark grayish brown (10YR 3/2) organic coatings lining root channels and filling pores; few fine distinct grayish brown (10YR 5/2) iron depletions and few medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few medium irregular black (10YR 2/1) iron-manganese nodules with sharp boundaries; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 42 to more than 80 inches
Thickness of the loess: 55 to about 80 inches
Texture of the particle-size control section: Averages between 35 and 42 percent clay and less than 7 percent sand

Ap or A horizon:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 or 2; 3 in some pedons in eroded areas
Texture—silt loam

E horizon:
Hue—10YR
Value—4 to 7 (6 to 8 dry)
Chroma—1 or 2; 3 in pedons that have redoximorphic features
Texture—silt loam

Bt and/or Btg horizon:
Hue—10YR in the upper part; 10YR or 2.5Y in the lower part
Value—4 to 6
Chroma—2 to 4 in the upper part; 1 to 6 in the lower part
Texture—silty clay loam or silty clay

BC or CB horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam

C or 2C horizon (if it occurs):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 8; typically 1 to 3
Texture—silt loam or loam

882A—Oconee-Darmstadt-Coulterville silt loams, 0 to 2 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Nearly level summits

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Oconee and similar soils: 35 percent
Darmstadt and similar soils: 30 percent
Coulterville and similar soils: 25 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have a dark surface layer 10 or more inches thick
• Areas of soils that have slopes of more than 2 percent

Dissimilar soils:
• The poorly drained Burksville, Cowden, and Piasa soils in the lower landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

882B—Oconee-Coulterville-Darmstadt silt loams, 2 to 5 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Oconee and similar soils: 35 percent
Coulterville and similar soils: 30 percent
Darmstadt and similar soils: 25 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a dark surface layer 10 or more inches thick
- Areas of soils that have slopes of less than 2 percent or more than 5 percent
- Areas of soils that are eroded

Dissimilar soils:
- The poorly drained Burksville, Cowden, and Piasa soils in the lower landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Okaw Series

Taxonomic classification: Fine, smectitic, mesic Chromic Vertic Albaqualfs

Typical Pedon for MLRA 114

Okaw silt loam, in a nearly level area, on a lake plain in a cultivated field, at an elevation of about 390 feet above mean sea level; about 1.25 miles northwest of Vergennes, in Jackson County, Illinois; approximately 1,944 feet west and 105 feet north of the southeast corner of sec. 8, T. 7 S., R. 2 W.; USGS Vergennes, Illinois, topographic quadrangle; lat. 37 degrees 55 minutes 26 seconds N. and long. 89 degrees 20 minutes 48 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate very fine and fine granular structure; friable; common very fine roots; few very fine constricted tubular pores; few fine and medium rounded black (N 2.5/0) iron-manganese nodules with sharp boundaries; slightly acid; abrupt smooth boundary.

Eg1—7 to 11 inches; light brownish gray (10YR 6/2) silt loam, very pale brown (10YR 8/2) dry; moderate thin platy structure parting to weak fine granular; friable; few very fine roots; many very fine and fine continuous tubular pores; common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common fine and medium rounded black (N 2.5/0) iron-manganese nodules with sharp boundaries; strongly acid; clear smooth boundary.

Eg2—11 to 15 inches; light brownish gray (10YR 6/2) silt loam, very pale brown (10YR 8/2) dry; weak thin platy structure parting to weak fine granular; friable; few very fine roots; many very fine and fine pores; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; many fine and medium rounded black (N 2.5/0) iron-manganese nodules with sharp boundaries; very strongly acid; abrupt wavy boundary.

2Btg—15 to 31 inches; grayish brown (10YR 5/2) silty clay; weak fine prismatic structure parting to weak fine angular blocky; very firm; few very fine roots; common faint grayish brown (10YR 5/2) clay films on faces of peds; few fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; light brownish gray (10YR 6/2) silt loam material in krotovinas and along cracks; very strongly acid; clear smooth boundary.

2Bg—31 to 41 inches; olive gray (5Y 5/2) silty clay; weak medium prismatic structure parting to weak medium and coarse angular and subangular blocky; very firm; few very fine roots along faces of peds; few prominent very dark brown (10YR 2/2) iron-manganese stains on faces of peds; few fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with clear strong

brown (7.5YR 4/6) boundaries; light brownish gray (10YR 6/2) silt loam material along cracks; very strongly acid; gradual smooth boundary.

2BCg—41 to 54 inches; olive gray (5Y 5/2) silty clay; weak coarse prismatic structure; very firm; few prominent very dark brown (10YR 2/2) iron-manganese stains on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; strongly acid; gradual smooth boundary.

2Cg1—54 to 63 inches; olive gray (5Y 5/2) silty clay; massive; firm; common prominent very dark brown (10YR 2/2) iron-manganese stains on faces along some cleavage planes; many medium and coarse irregular black (10YR 2/1) masses of iron-manganese accumulation with diffuse strong brown (7.5YR 4/6) boundaries; neutral; clear smooth boundary.

2Cg2—63 to 73 inches; olive gray (5Y 5/2) clay; massive; very firm; few prominent shiny slickensides and common distinct olive gray (5Y 4/2) pressure faces along vertical cleavage planes; common fine and medium irregular dark reddish brown (5YR 3/4) masses of iron-manganese accumulation with clear boundaries and few medium irregular black (10YR 2/1) iron-manganese nodules with diffuse strong brown (7.5YR 4/6) boundaries; slightly alkaline; gradual smooth boundary.

2Cg3—73 to 80 inches; light olive gray (5Y 6/2) silty clay loam; massive; firm; few distinct shiny slickensides and few faint olive gray (5Y 5/2) pressure faces along cleavage planes; common medium and coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium and coarse irregular black (10YR 2/1) masses of iron-manganese accumulation with clear strong brown (7.5YR 4/6) boundaries; slightly alkaline.

Range in Characteristics

Depth to the base of soil development: 40 to 75 inches

Thickness of the loess or other silty material: 10 to 20 inches

Depth to carbonates (if they occur): Carbonates are in the 2Cg horizon.

Other features: Some pedons have a B/E horizon, which is mostly Bt material with clay depletions on faces of peds. This horizon is less than 3 inches thick.

Ap or A horizon:
Hue—10YR
Value—3 to 5 (6 or 7 dry)
Chroma—1 or 2
Texture—silt loam or silty clay loam

Eg horizon:
Hue—10YR
Value—4 to 7 (6 to 8 dry)
Chroma—1 or 2
Texture—silt loam or silty clay loam

2Bg and 2Btg horizons:
Hue—10YR, 2.5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay or clay; some pedons have subhorizons of silty clay loam

2BCg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam, silty clay, or clay

2Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam, silty clay, or clay

8084A—Okaw silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Lake plains
Position on the landform: Treads

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Clayey lacustrine sediments
Flooding frequency: Occasional

Map Unit Composition

Okaw and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Okaw soil
- Soils that contain less clay in the subsoil than the Okaw soil
- Soils that contain more sand in the substratum than the Okaw soil

Dissimilar soils:
• The moderately well drained Colp and somewhat poorly drained Hurst soils in the higher, more convex landform positions
• Small areas of very poorly drained soils in depressions that remain wet for periods that extend into the growing season

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

801D—Orthents, silty, steep

Setting

Landform: Till plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Disturbed soil material
Flooding: None

Map Unit Composition

Orthents, silty: 85 percent
Dissimilar components: 15 percent

Minor Components

Dissimilar components:
• Areas of urban land
• Areas that are steeper than the Orthents
• Areas of soils that have loamy or clayey layers
• Small bodies of water

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

802D—Orthents, loamy, steep

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Disturbed soil material
Flooding: None

Map Unit Composition

Orthents, loamy: 85 percent
Dissimilar components: 15 percent

Minor Components

Dissimilar components:
• Areas of urban land
• Areas that are steeper than the Orthents
• Areas of sandy soils
• Areas of soils that have clayey layers
• A few areas that have ledges of bedrock
• Small bodies of water

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Petrolia Series

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon for MLRA 114

Petrolia silty clay loam, in a nearly level area in a cultivated field, at an elevation of about 412 feet above mean sea level; about 3 miles south of Bartelso, in Clinton County, Illinois; approximately 800 feet west and 400 feet south of the center of sec. 29, T. 1 N., R. 3 W.; USGS Addieville, Illinois, topographic quadrangle; lat. 38 degrees 29 minutes 55 seconds N. and long. 89 degrees 27 minutes 28 seconds W., NAD 27:

Ap—0 to 8 inches; dark grayish brown (2.5Y 4/2) silty clay loam, light brownish gray (2.5Y 6/2) dry; moderate fine granular structure; friable; common very fine roots; few fine rounded black (N 2.5/0) and strong brown (7.5YR 4/6) masses of iron-manganese accumulation throughout; about 34 percent clay; neutral; abrupt smooth boundary.
Bg—8 to 15 inches; dark gray (2.5Y 4/1) silty clay loam; weak medium subangular blocky structure;

friable; few very fine roots; few faint dark gray (2.5Y 4/1) pressure faces on faces of peds; common fine prominent dark yellowish brown (10YR 4/4) and common fine faint (2.5Y 4/2) masses of iron accumulation in the matrix; few fine rounded black (N 2.5/0) and strong brown (7.5YR 4/6) masses of iron-manganese accumulation throughout; about 32 percent clay; slightly acid; clear smooth boundary.

Btg1—15 to 26 inches; gray (2.5Y 5/1) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct dark gray (2.5Y 4/1) clay films on faces of peds; common fine and medium prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine and medium rounded black (N 2.5/0) iron-manganese nodules with sharp strong brown (7.5YR 4/6) boundaries and few fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation throughout; about 33 percent clay; slightly acid; clear smooth boundary.

Btg2—26 to 42 inches; gray (2.5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium and coarse subangular blocky; firm; few very fine roots; few distinct dark gray (2.5Y 4/1) clay films on faces of peds; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium rounded black (N 2.5/0) iron-manganese nodules with sharp strong brown (7.5YR 4/6) boundaries and common fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation throughout; about 34 percent clay; slightly acid; gradual smooth boundary.

BCg—42 to 55 inches; gray (2.5Y 5/1) silty clay loam; weak medium prismatic structure; firm; few very fine roots; few distinct dark gray (2.5Y 4/1) clay films lining root channels and pores; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries and common fine and medium irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation throughout; about 35 percent clay; slightly acid; gradual smooth boundary.

Cg1—55 to 73 inches; gray (2.5Y 6/1) silty clay loam; massive; firm; few very fine roots in old channels; few distinct dark gray (2.5Y 4/1) clay films lining root channels and pores; many fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries and common fine and medium irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation throughout; about 33 percent clay; neutral; diffuse smooth boundary.

Cg2—73 to 80 inches; gray (2.5Y 6/1) silty clay loam; massive; firm; common medium and coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries and few fine and medium irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation throughout; dark gray (2.5Y 4/1) krotovina; about 36 percent clay; neutral.

Range in Characteristics

Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 15 percent fine sand or coarser

Reaction: Typically slightly acid or neutral; very strongly acid to slightly alkaline in individual strata or subhorizons

Depth to carbonates (if they occur): More than 60 inches

Other features: Some pedons in undisturbed areas have a thin A horizon.

Ap or A horizon:
Hue—10YR or 2.5Y
Value—4 to 6 (6 to 8 dry); 3 (5 dry) in some pedons in undisturbed areas
Chroma—1 or 2
Texture—silty clay loam or silt loam

Bg or Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—dominantly silty clay loam; silt loam in some pedons; strata of silty clay, silt loam, loam, or fine sandy loam in some pedons

3288L—Petrolia silty clay loam, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Flood plains
Position on the landform: Backswamps

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Silty clay loam alluvium
Flooding frequency: Frequent

Map Unit Composition

Petrolia and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Petrolia soil
- Soils that contain less clay in the substratum than the Petrolia soil
- Soils that are more acid than the Petrolia soil

Dissimilar soils:
- The somewhat poorly drained Wakeland soils in the higher landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Piasa Series

Taxonomic classification: Fine, smectitic, mesic Mollic Natraqualfs

Typical Pedon for MLRA 114

Piasa silt loam, in a nearly level area in a cultivated field, at an elevation of about 630 feet above mean sea level; about 3 miles north of Hillsboro, in Montgomery County, Illinois; approximately 277 feet west and 85 feet south of the northeast corner of sec. 26, T. 9 N., R. 4 W.; USGS Hillsboro, Illinois, topographic quadrangle; lat. 39 degrees 12 minutes 08 seconds N. and long. 89 degrees 29 minutes 37 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; friable; common very fine roots; few fine continuous tubular pores; few fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; neutral; abrupt smooth boundary.

Eg—8 to 12 inches; dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; moderate thin and medium platy structure; friable; few very fine roots; few fine pores filled with black (10YR 2/1) soil material; light gray (10YR 7/1) (dry) clay depletions on faces of peds; common fine and medium rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; slightly alkaline; abrupt wavy boundary.

Btng—12 to 16 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak very coarse columnar structure parting to moderate fine angular blocky; firm; few very fine roots; few fine tubular pores; common distinct gray (10YR 6/1) (dry) clay depletions on the slightly rounded caps of the columns and on the faces of the columns; common prominent black (10YR 2/1) organic coatings lining root channels and filling pores; many distinct dark gray (10YR 4/1) clay films on faces of peds; common fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation; slightly alkaline; clear smooth boundary.

Btkng1—16 to 20 inches; dark grayish brown (2.5Y 4/2) silty clay; weak very coarse prismatic structure parting to moderate medium and coarse angular blocky; firm, sticky; few very fine roots; few fine tubular pores; few prominent black (10YR 2/1) organic coatings lining root channels and filling pores; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine faint very dark grayish brown (2.5Y 3/2) and few fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation, few fine and medium irregular black (10YR 2/1) iron-manganese nodules with sharp boundaries, and few medium rounded white (10YR 8/1) carbonate concretions; slightly effervescent; slightly alkaline; clear smooth boundary.

Btkng2—20 to 26 inches; dark grayish brown (2.5Y 4/2) silty clay; weak very coarse prismatic structure parting to moderate medium and coarse

angular blocky; firm, sticky; few very fine roots; few fine tubular pores; few prominent black (10YR 2/1) organic coatings lining root channels and filling pores; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; few fine rounded strong brown (7.5YR 5/6) masses of iron-manganese accumulation, few fine and medium irregular black (10YR 2/1) iron-manganese nodules with sharp boundaries, and common medium and coarse rounded white (10YR 8/1) carbonate concretions; slightly effervescent; moderately alkaline; clear smooth boundary.

Btkng3—26 to 33 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak very coarse prismatic structure parting to weak and moderate medium angular blocky; firm, slightly sticky; few very fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries and common medium and coarse rounded white (10YR 8/1) carbonate concretions; slightly effervescent; moderately alkaline; clear smooth boundary.

Btkng4—33 to 37 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak very coarse prismatic structure parting to weak coarse angular blocky; friable; few very fine roots; few distinct dark gray (10YR 4/1) clay films on faces of peds; many medium and coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine and medium irregular black (10YR 2/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries and few medium rounded white (10YR 8/1) carbonate concretions; slightly effervescent; slightly alkaline; clear smooth boundary.

BCtg—37 to 48 inches; grayish brown (2.5Y 5/2) silt loam; weak coarse angular blocky structure; friable; few very fine roots; few faint gray (10YR 5/1) clay films on vertical faces of peds; many coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation and few fine irregular black (10YR 2/1) iron-manganese nodules with sharp boundaries; slightly alkaline; clear smooth boundary.

2Btgb1—48 to 62 inches; gray (10YR 5/1) silt loam; moderate fine and medium prismatic structure parting to weak medium angular blocky; friable; few fine vesicular pores; few prominent very dark gray (10YR 3/1) organo-clay films lining root channels and filling pores and many distinct dark gray (10YR 4/1) clay films on faces of peds; many coarse prominent yellowish brown (10YR 5/8) and reddish brown (5YR 4/4) masses of iron accumulation in the matrix; few medium and coarse irregular black (10YR 2/1) iron-manganese nodules with diffuse strong brown (7.5YR 5/6) boundaries; about 10 to 15 percent sand and 1 percent pebbles; slightly alkaline; gradual smooth boundary.

2Btgb2—62 to 80 inches; grayish brown (10YR 5/2) clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; few fine vesicular pores; few prominent very dark gray (10YR 3/1) organo-clay films lining root channels and filling pores and common distinct dark gray (10YR 4/1) clay films on faces of peds; many medium and coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine and medium irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 5 percent pebbles; neutral.

Range in Characteristics

Depth to the base of the natric horizon: 30 to 50 inches
Thickness of the loess: 40 to 72 inches
Exchangeable sodium: 15 percent to more than 35 percent in the natric horizon
Depth to carbonates (if they occur): Variable

Ap or A horizon:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—1 or 2
Texture—silt loam

Btng horizon and Btkng horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay

BCg horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y

Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silt loam

Cg and 2Cg horizons (if they occur) and 2Ab and/or 2Btgb horizon (if it occurs):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silt loam, loam, silty clay loam, or clay loam

Pierron Series

Taxonomic classification: Fine, smectitic, mesic Typic Albaqualfs

Typical Pedon for MLRA 114

Pierron silt loam, in a nearly level area in a cultivated field, at an elevation of about 540 feet above mean sea level; about 2 miles northeast of Marine, in Madison County, Illinois; approximately 1,730 feet east and 80 feet south of the northwest corner of sec. 14, T. 4 N., R. 6 W.; USGS Grantfork, Illinois, topographic quadrangle; lat. 38 degrees 48 minutes 02 seconds N. and long. 89 degrees 44 minutes 19 seconds W., NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; very friable; many very fine and common fine roots; few fine continuous tubular pores; many distinct light brownish gray (10YR 6/2) (dry) clay depletions on faces of peds; few fine rounded black (5YR 2.5/1) iron-manganese nodules with sharp boundaries; slightly acid; abrupt smooth boundary.

Eg1—8 to 12 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak thin platy structure; very friable; few very fine roots; common very fine and fine continuous tubular pores; common distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; few medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; many fine and medium rounded reddish brown (5YR 4/4) and dark reddish brown (5YR 2.5/2) iron-manganese nodules with clear boundaries; moderately acid; clear smooth boundary.

Eg2—12 to 20 inches; light brownish gray (10YR 6/2) silt loam, light gray (10YR 7/1) dry; moderate thick platy structure parting to weak fine subangular blocky; very friable; few very fine roots; common very fine continuous tubular pores; many distinct white (10YR 8/1) (dry) clay depletions on faces of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films lining root channels; common medium prominent light olive brown (2.5Y 5/4) and few fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common medium rounded black (5YR 2.5/1) iron-manganese nodules with clear reddish brown (5YR 4/4) boundaries; strongly acid; abrupt smooth boundary.

Btg1—20 to 29 inches; light brownish gray (2.5Y 6/2) silty clay; moderate medium prismatic structure parting to strong fine and medium angular blocky; very firm; few very fine roots; few prominent very dark grayish brown (10YR 3/2) organo-clay films lining root channels; many prominent grayish brown (2.5Y 5/2) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/4) and few fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; common medium rounded dark reddish brown (5YR 2.5/2) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; very strongly acid; clear smooth boundary.

Btg2—29 to 36 inches; light brownish gray (2.5Y 6/2) silty clay; strong medium prismatic structure parting to moderate medium angular blocky; very firm; common prominent very dark grayish brown (10YR 3/2) organo-clay films lining root channels; many prominent grayish brown (2.5Y 5/2) clay films on faces of peds; common coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium rounded dark reddish brown (5YR 2.5/2) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; very strongly acid; clear smooth boundary.

Btg3—36 to 44 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate medium angular blocky; very firm; common prominent very dark grayish brown (10YR 3/2) organo-clay films lining root channels; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds; many coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium rounded black (5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; strongly acid; clear smooth boundary.

Btg4—44 to 55 inches; light olive gray (5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; common distinct dark gray (10YR 4/1)

organo-clay films lining root channels; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common coarse prominent strong brown (7.5YR 5/6) and common medium prominent light olive brown (2.5Y 5/6) masses of iron accumulation in the matrix; common medium rounded black (5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; moderately acid; gradual smooth boundary.

Btg5—55 to 66 inches; light olive gray (5Y 6/2) silty clay loam; weak coarse prismatic structure; friable; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common medium prominent brownish yellow (10YR 6/8) and yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine irregular black (5YR 2.5/1) iron-manganese nodules with clear boundaries and common fine and medium irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation; slightly acid; clear smooth boundary.

2Cg—66 to 80 inches; grayish brown (2.5Y 5/2) silt loam; massive; friable; common fine and medium prominent brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; few fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation with diffuse strong brown (7.5YR 4/6) boundaries; about 10 percent sand; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 50 to about 80 inches

Thickness of the loess: 55 to more than 80 inches

Texture of the particle-size control section: Averages between 35 and 45 percent clay and less than 7 percent sand

Other features: Some pedons in undisturbed areas have a thin A horizon. Some pedons have a B/E horizon less than 3 inches thick immediately below the E horizon.

Ap horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry); 3 (5 dry) in some pedons in undisturbed areas
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR or 2.5Y
Value—5 or 6 (6 to 8 dry)
Chroma—1 or 2
Texture—silt loam or silt

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay

BCg or BCtg horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silt loam

Cg or 2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—4 to 7
Chroma—0 to 2
Texture—silt loam, loam, silty clay loam, or clay loam

31A—Pierron silt loam, 0 to 2 percent slopes

Setting

Landform: Loess-covered till plains

Position on the landform: Nearly level or slightly depressional parts of broad interfluves

Soil Properties and Qualities

Drainage class: Poorly drained

Dominant parent material: Loess; or loess and the underlying silty pedisediment

Flooding: None

Map Unit Composition

Pierron and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Pierron soil
- Soils that contain a concentration of exchangeable sodium in the subsoil
- Soils that do not have an abrupt textural change between the subsurface layer and the subsoil

Dissimilar soils:
- The somewhat poorly drained Marine soils on micro-highs
- Small areas of very poorly drained soils in closed depressions that remain wet for periods that extend into the growing season

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

864—Pits, quarries

General Description

- This map unit consists of open pits, the entrances to room and pillar quarries, and the adjacent work and storage areas. In a typical area, the basin and sidewalls are limestone bedrock. In many places a talus slope is along the basin or at the foot of the sidewalls. The work area includes stockpiles of crushed limestone, small buildings, machinery, and haulage roads.

Composition

Pits, quarries: 90 percent
Dissimilar components: 10 percent

Minor Components

Dissimilar components:
- A rim of soil around the top of the sidewalls
- Pools of water and scattered areas of debris

Racoon Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaqualfs

Typical Pedon for MLRA 114

Racoon silt loam, in a nearly level area in a cultivated field, at an elevation of about 425 feet above mean sea level; about 1 mile east of West End, in Saline County, Illinois; approximately 135 feet north and 2,095 feet east of the center of sec. 30, T. 7 S., R. 5 E.; USGS Akin, Illinois, topographic quadrangle; lat. 37 degrees 53 minutes 08 seconds N. and long. 88 degrees 41 minutes 23 seconds W., NAD 27:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; common fine very dark grayish brown (10YR 3/2) masses of iron-manganese accumulation throughout; neutral; abrupt smooth boundary.

Eg1—6 to 10 inches; dark grayish brown (10YR 4/2) silt loam; weak thin platy structure; firm; common fine very dark grayish brown (10YR 3/2) masses of iron-manganese accumulation throughout; neutral; abrupt smooth boundary.

Eg2—10 to 14 inches; dark grayish brown (10YR 4/2) silt loam; weak medium platy structure parting to weak fine granular; friable; common fine faint grayish brown (10YR 5/2) and few fine distinct light gray (10YR 7/1) iron depletions in the matrix; common fine very dark grayish brown (10YR 3/2) masses of iron-manganese accumulation throughout; strongly acid; clear smooth boundary.

Eg3—14 to 30 inches; gray (10YR 6/1) silt loam; weak medium platy structure parting to weak fine granular; friable; common very fine constricted tubular pores; common medium prominent yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; many fine black (10YR 2/1) masses of iron-manganese accumulation throughout; few grayish brown (10YR 5/2) krotovinas; very strongly acid; clear smooth boundary.

Btg1—30 to 37 inches; gray (10YR 6/1) silty clay loam; weak medium prismatic structure parting to weak fine subangular blocky; firm; few very fine tubular pores; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; common fine black (10YR 2/1) iron-manganese concretions; very strongly acid; clear smooth boundary.

Btg2—37 to 47 inches; gray (10YR 6/1) silty clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint light gray (10YR 7/1) iron depletions and many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine black (10YR 2/1) iron-manganese concretions; very strongly acid; clear smooth boundary.

Btg3—47 to 59 inches; gray (10YR 6/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; few faint gray (10YR 5/1) and common prominent dark olive gray (5Y 3/2) organo-clay films on faces of peds; common medium prominent strong brown (7.5YR 5/6) and dark brown (7.5YR 4/4) masses of iron accumulation in the matrix; few fine black (10YR 2/1) iron-manganese concretions; strongly acid; clear smooth boundary.

Cg—59 to 73 inches; gray (5Y 6/1 and 10YR 6/1) silt loam; massive; friable; many coarse distinct

grayish brown (10YR 5/2) and prominent brown (7.5YR 4/4) masses of iron accumulation in the matrix; slightly acid grading to neutral in the lower part.

Range in Characteristics

Depth to the top of the argillic horizon: 24 to 36 inches
Depth to the base of the argillic horizon: 40 to 80 inches
Texture of the particle-size control section: Averages between 27 and 35 percent clay, less than 10 percent sand, and less than 2 percent gravel

Ap or A horizon:
Hue—10YR
Value—3 to 6 (5 to 7 dry)
Chroma—2 or 3
Texture—silt loam

Eg horizon:
Hue—10YR or 2.5Y
Value—4 to 7 (6 to 8 dry)
Chroma—1 or 2
Texture—silt loam

Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 7
Chroma—0 to 2
Texture—dominantly silty clay loam; silt loam in upper or lower subhorizons in some pedons

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 or 2
Texture—dominantly silt loam or loam; stratified with loamy fine sand to silty clay in some pedons

109A—Racoon silt loam, 0 to 2 percent slopes

Setting

Landform: Till plains
Position on the landform: Nearly level footslopes

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Loess and silty local alluvium
Flooding: None

Map Unit Composition

Racoon and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
• Soils that have a darker surface layer than that of the Racoon soil
• Soils that contain more clay in the subsoil than the Racoon soil

Dissimilar soils:
• The moderately well drained Homen soils in the higher landform positions
• Areas of soils that remain wet for periods that extend into the growing season

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• “Crops and Pasture”
• “Forestland Management and Productivity”
• “Wildlife Habitat”
• “Engineering” and “Soil Properties”

Raddle Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludolls

Typical Pedon for MLRA 115B

Raddle silt loam, in a nearly level area in a cultivated field, at an elevation of about 365 feet above mean sea level; about 4 miles northeast of Grand Tower, in Jackson County, Illinois; approximately 250 feet north and 1,320 feet west of the center of sec. 5, T. 10 S., R. 3 W.; USGS Gorham, Illinois, topographic quadrangle; lat. 37 degrees 41 minutes 01 second N. and long. 89 degrees 28 minutes 00 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate very fine granular structure; friable; common very fine roots; common very fine vesicular pores; neutral; abrupt smooth boundary.
A—8 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; common very fine roots; common fine vesicular pores; few distinct very dark grayish brown (10YR 3/2) organic coatings lining root channels; slightly acid; abrupt smooth boundary.
BA—14 to 20 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few fine vesicular pores; few distinct very

dark grayish brown (10YR 3/2) organic coatings lining root channels; slightly acid; abrupt smooth boundary.

Bw1—20 to 28 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few fine vesicular pores; few distinct continuous very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few distinct discontinuous very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; slightly acid; clear smooth boundary.

Bw2—28 to 36 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; few very fine roots; few fine vesicular pores; few distinct continuous very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; very few distinct patchy very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; moderately acid; clear smooth boundary.

Bw3—36 to 52 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few very fine roots; few fine vesicular pores; common distinct continuous very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few distinct continuous very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; moderately acid; clear smooth boundary.

Bw4—52 to 58 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few very fine roots; few fine vesicular pores and few medium tubular earthworm channels; few distinct continuous very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few distinct continuous very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; common fine and medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bw5—58 to 69 inches; dark yellowish brown (10YR 4/4) silt loam; weak coarse prismatic structure; friable; few fine vesicular pores; very few faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few distinct patchy very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; neutral; abrupt smooth boundary.

BC—69 to 80 inches; strong brown (7.5YR 4/4) silt loam; weak coarse subangular blocky structure; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films lining root channels; few distinct patchy very pale brown (10YR 8/2) (dry) clay depletions on faces of peds; few thin lenses and pockets of very fine sand; neutral.

Range in Characteristics

Depth to the base of soil development: 40 to more than 80 inches; typically 50 to 74 inches
Thickness of the mollic epipedon: 10 to 24 inches; the mollic epipedon includes the BA or AB horizon in some pedons
Texture of the particle-size control section: Averages between 18 and 24 percent clay and less than 15 percent fine sand or coarser
Depth to a buried soil (if it occurs): More than 60 inches
Reaction: Moderately acid to neutral

Ap and A horizons:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 to 3
Texture—silt loam

Bw horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 or 4
Texture—typically silt loam; loam in some thin subhorizons of some pedons

BC or C horizon (if it occurs):
Hue—10YR or 7.5YR
Value—3 to 6
Chroma—2 to 4
Texture—typically silt loam; strata of silt loam, loam, sandy loam, clay loam, or silty clay loam in some pedons

7430A—Raddle silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Alluvial fans and footslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Silty local alluvium
Flooding frequency: Rare

Map Unit Composition

Raddle and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thicker dark surface layer than that of the Raddle soil
- Soils that contain more sand in the substratum than the Raddle soil
- Areas of soils that are more sloping than the Raddle soil

Dissimilar soils:
- The somewhat poorly drained Tice soils in the slightly lower landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Redbud Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon for MLRA 114

Redbud silt loam, in a gently sloping area on a lacustrine terrace tread, in a cultivated field, at an elevation of about 420 feet above mean sea level; about 6 miles south of New Athens, in St. Clair County, Illinois; approximately 1,280 feet north and 2,040 feet east of the southwest corner of sec. 28, T. 3 S., R. 7 W.; USGS Red Bud, Illinois, topographic quadrangle; lat. 38 degrees 14 minutes 10 seconds N. and long. 89 degrees 53 minutes 05 seconds W., NAD 27:

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common very fine and fine roots throughout; neutral; abrupt smooth boundary.

E—9 to 16 inches; dark yellowish brown (10YR 4/4) silt loam, pale brown (10YR 6/3) dry; moderate medium platy structure; friable; common very fine roots throughout; few distinct dark brown (10YR 3/3) organic coatings lining root channels; few fine irregular black (N 2.5/0) masses of iron-manganese accumulation; slightly acid; abrupt smooth boundary.

Bt1—16 to 22 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots between peds; common distinct brown (7.5YR 4/2) clay films on faces of peds; few fine and medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation; moderately acid; clear smooth boundary.

Bt2—22 to 28 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium prismatic structure parting to strong medium subangular blocky; firm; few very fine roots between peds; few prominent black (10YR 2/1) iron-manganese stains on faces of peds; common distinct brown (7.5YR 4/2) clay films on faces of peds; common fine and medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation; moderately acid; clear smooth boundary.

Bt3—28 to 36 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots between peds; few prominent black (10YR 2/1) iron-manganese stains on faces of peds; common distinct brown (7.5YR 4/2) clay films on faces of peds; many medium prominent grayish brown (10YR 5/2) iron depletions and common medium distinct yellowish red (5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation; moderately acid; clear smooth boundary.

Bt4—36 to 45 inches; strong brown (7.5YR 4/4) silty clay loam; moderate medium prismatic structure; friable; few very fine roots between peds; few distinct brown (7.5YR 4/2) clay films on faces of peds; common medium prominent grayish brown (10YR 5/2) iron depletions and common medium prominent yellowish red (5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation; moderately acid; abrupt smooth boundary.

2Bt5—45 to 60 inches; dark yellowish brown (10YR 4/4) silty clay; moderate medium prismatic structure; very firm; few very fine roots between peds; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation; slightly acid; clear smooth boundary.

2Bt6—60 to 72 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic

structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation; slightly acid; clear smooth boundary.

2BCt—72 to 80 inches; brown (10YR 4/3) silt loam; weak medium prismatic structure; friable; few distinct dark gray (10YR 4/1) clay films in root channels and pores; common coarse faint grayish brown (10YR 5/2) iron depletions in the matrix; few fine irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 54 to more than 80 inches
Thickness of the loess: Typically 36 to about 70 inches
Particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand
Depth to carbonates (if they occur): More than 48 inches
Other features: Some pedons in undisturbed areas have a thin A horizon. Some pedons have a BE or an EB horizon.

Ap horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry); 3 (5 dry) in some pedons in undisturbed areas
Chroma—2 or 3; 1 or 2 in some pedons in undisturbed areas
Texture—silt loam

E horizon:
Hue—10YR
Value—4 to 6 (6 to 8 dry)
Chroma—3 to 6
Texture—silt loam or silty clay loam

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam

2Bt horizon and 2BC or 2C horizon (if it occurs):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—2 to 4
Texture—clay, silty clay, silty clay loam, or silt loam; stratified in some pedons

437B—Redbud silt loam, 2 to 5 percent slopes

Setting

Landform: Lacustrine terraces
Position on the landform: Treads

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess and the underlying clayey lacustrine sediments
Flooding: None

Map Unit Composition

Redbud and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are well drained
- Areas of soils that are more sloping or less sloping than the Redbud soil
- Areas of soils that are eroded

Dissimilar soils:
- The somewhat poorly drained Millstadt soils in the lower or less convex landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

907D3—Redbud-Colp silty clay loams, 10 to 18 percent slopes, severely eroded

Setting

Landform: Lacustrine terraces
Position on the landform: Risers

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess and the underlying clayey lacustrine sediments
Flooding: None

Map Unit Composition

Redbud and similar soils: 50 percent

Colp and similar soils: 40 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that are well drained
• Areas of soils that have slopes of more than 18 percent or less than 10 percent
• Areas of soils that are less eroded than the Redbud and Colp soils

Dissimilar soils:
• The somewhat poorly drained Hurst and Millstadt soils in the lower or less convex landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• "Crops and Pasture"
• "Forestland Management and Productivity"
• "Wildlife Habitat"
• "Engineering" and "Soil Properties"

123—Riverwash

Setting

Landform: Flood plains
Position on the landform: Sandbars

Soil Properties and Qualities

Dominant parent material: Sandy alluvium
Frequency of flooding: Frequent

Map Unit Composition

Riverwash: 85 percent
Dissimilar components: 15 percent

Minor Components

Dissimilar components:
• The very poorly drained, loamy Fluvaquents in sloughs and depressions
• Areas of soils that have short, steep slopes; along old channels
• Pools of water
• Scattered areas of debris, particularly along the shoreline

Rocher Series

Taxonomic classification: Coarse-loamy, mixed, superactive, calcareous, mesic Typic Udifluvents

Typical Pedon for MLRA 115B

Rocher loam, on a slope of 2 percent, near the crest of a broad, low natural levee in a cultivated field, at an elevation of about 382 feet above mean sea level; about 7 miles southeast of Prairie du Rocher, in Randolph County, Illinois; approximately 1,980 feet southwest with a line perpendicular to the levee and 1,320 feet northeast of the Mississippi River; also approximately 5,400 feet southeast along the levee from the intersection of the levee and the Discharge (drainage ditch), and 800 feet southwest perpendicular to the levee; Illinois State Plane Coordinates 484,480 feet north and 540,490 feet east, Illinois West Zone; T. 6 S., R. 8 W.; USGS Ste. Genevieve, Missouri-Illinois, topographic quadrangle; lat. 37 degrees 59 minutes 47 seconds N. and long. 90 degrees 01 minute 32 seconds W., NAD 27:

Ap—0 to 5 inches; brown (10YR 4/3) loam, pale brown (10YR 6/3) dry; weak medium and coarse granular structure; very friable; common fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.
C1—5 to 11 inches; brown (10YR 5/3) very fine sandy loam; massive; very friable; common fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.
C2—11 to 32 inches; light yellowish brown (10YR 6/4) loamy very fine sand; single grain; loose; few fine roots; slightly effervescent; slightly alkaline; gradual smooth boundary.
C3—32 to 53 inches; yellowish brown (10YR 5/4) loamy very fine sand; single grain; loose; slightly effervescent; slightly alkaline; gradual smooth boundary.
C4—53 to 62 inches; light yellowish brown (10YR 6/4) loamy fine sand; single grain; loose; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 6 to 20 inches
Thickness of the A and AC horizons: 6 to 20 inches
Depth to carbonates: 10 inches or less; some pedons do not have carbonates in some strata at depths between 20 and 60 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 or 3
Texture—loam or silt loam

AC horizon (if it occurs):
Hue—10YR

Value—4 or 5 (6 or 7 dry)
Chroma—2 or 3
Texture—loam or silt loam

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—very fine sand, very fine sandy loam, or loamy very fine sand; strata of loamy fine sand, fine sand, fine sandy loam, silt loam, or loam

8038B—Rocher loam, 2 to 5 percent slopes, occasionally flooded

Setting

Landform: Gently undulating flood plains
Position on the landform: Natural levees and flood-plain splays

Soil Properties and Qualities

Drainage class: Somewhat excessively drained
Dominant parent material: Stratified calcareous loamy or sandy alluvium that is dominated by very fine sand
Flooding frequency: Occasional

Map Unit Composition

Rocher and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thicker dark surface layer than that of the Rocher soil
- Soils that are not calcareous in the upper part
- Areas of soils that have short, steep slopes

Dissimilar soils:
- The poorly drained Ambraw soils in swales and slight depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Ruma Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon for MLRA 114

Ruma silty clay loam, in an area of Ruma-Ursa silty clay loams, 18 to 35 percent slopes, severely eroded; on a south-facing shoulder slope in a hayfield, at an elevation of about 485 feet above mean sea level; about 2 miles east of Floraville, in St. Clair County, Illinois; approximately 1,515 feet south and 1,030 feet west of the northeast corner of sec. 7, T. 2 S., R. 8 W.; USGS Millstadt, Illinois, topographic quadrangle; lat. 38 degrees 22 minutes 06 seconds N. and long. 90 degrees 01 minute 18 seconds W., NAD 27:

Ap—0 to 5 inches; mixed dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/4) silty clay loam, light yellowish brown (10YR 6/4) dry; moderate fine subangular blocky structure; friable; many very fine and common fine and medium roots; few very fine and fine constricted tubular pores; about 29 percent clay; slightly acid; abrupt smooth boundary.

Bt1—5 to 13 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common very fine and few fine and medium roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; about 33 percent clay; strongly acid; clear smooth boundary.

Bt2—13 to 28 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; firm; common very fine and few fine roots; many distinct dark yellowish brown (10YR 3/4) organo-clay films on faces of peds; about 32 percent clay; strongly acid; gradual smooth boundary.

Bt3—28 to 40 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate medium prismatic structure parting to moderate medium and coarse angular blocky; firm; few very fine roots; few very fine constricted tubular pores; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few prominent black (10YR 2/1) iron-manganese coatings on vertical faces of peds and lining root channels; about 28 percent clay; moderately acid; gradual smooth boundary.

Bt4—40 to 48 inches; yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure; friable;

few very fine roots; few very fine and fine constricted tubular pores; few distinct dark yellowish brown (10YR 4/4) clay films on vertical faces of peds; few fine rounded very dark brown (7.5YR 2.5/2) masses of iron-manganese accumulation with clear strong brown (7.5YR 5/6) boundaries; about 23 percent clay; slightly acid; clear smooth boundary.

2BCt1—48 to 62 inches; brown (7.5YR 4/4) silt loam; massive; friable; few very fine roots; common very fine and fine tubular pores; very few distinct dark yellowish brown (10YR 4/4) clay films lining root channels; few fine rounded very dark brown (7.5YR 2.5/2) masses of iron-manganese accumulation with clear strong brown (7.5YR 5/6) boundaries; about 25 percent clay and 8 percent sand; slightly acid; gradual smooth boundary.

2BCt2—62 to 80 inches; brown (7.5YR 4/4) silt loam; massive; friable; few very fine roots; few fine and medium tubular pores; very few distinct dark yellowish brown (10YR 4/4) clay films lining root channels; few fine distinct pinkish gray (7.5YR 6/2) iron depletions along root channels; few fine rounded black (7.5YR 2.5/1) masses of iron-manganese accumulation with clear strong brown (7.5YR 5/6) boundaries; about 24 percent clay and 12 percent sand; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 40 to 70 inches
Thickness of the loess: 40 to about 80 inches
Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand

Ap horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry); 3 (5 or 6 dry) in pedons in undisturbed areas
Chroma—2 to 4; 1 or 2 in pedons in undisturbed areas
Texture—silt loam or silty clay loam

E, EB, or BE horizon (if it occurs):
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 to 4
Texture—silt loam

Bt horizon and BC horizon (if it occurs):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt, 2BC, 2CB, or 2C horizon (if it occurs):
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—2 to 6
Texture—silt loam, silty clay loam, clay loam, or loam

491B—Ruma silt loam, 2 to 5 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Ruma and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Ruma soil
- Soils that contain more clay in the surface layer than the Ruma soil
- Areas of soils that are eroded

Dissimilar soils:
- The moderately well drained Homen soils in the less sloping or less convex landform positions
- The somewhat poorly drained Marine soils in depressions at the head of drainageways

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

491C2—Ruma silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Loess-covered till plains

Position on the landform: Convex summits, shoulders, and backslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Ruma and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Ruma soil
- Soils that contain more clay in the surface layer than the Ruma soil
- Areas of soils that are severely eroded

Dissimilar soils:
- The moderately well drained Homen soils in the less sloping or less convex landform positions
- The somewhat poorly drained Marine soils in depressions at the head of drainageways

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

491D3—Ruma silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Erosional side slopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Ruma and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the surface layer than the Ruma soil
- Soils that are less eroded than the Ruma soil
- Areas of soils that are more sloping than the Ruma soil

Dissimilar soils:
- The moderately well drained Homen soils in the less sloping or less convex landform positions
- The somewhat poorly drained Marine soils in depressions at the head of drainageways

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

886F—Ruma-Ursa silt loams, 18 to 35 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Side slopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Ruma—loess, or loess and the underlying silty pedisediment; Ursa—till or accretion gley that contains a strongly developed paleosol and commonly a thin mantle of loess or silty pedisediment
Flooding: None

Map Unit Composition

Ruma and similar soils: 50 percent
Ursa and similar soils: 40 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil
- Areas of soils that have slopes of more than 35 percent or less than 18 percent
- Areas of soils that are eroded

Dissimilar components:
• The somewhat poorly drained Wakeland soils on narrow flood plains
• Areas where bedrock is exposed; along the lower slopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

886F3—Ruma-Ursa silty clay loams, 18 to 35 percent slopes, severely eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Erosional side slopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Ruma—loess, or loess and the underlying silty pedisediment; Ursa—till or accretion gley that contains a strongly developed paleosol and commonly a thin mantle of loess or silty pedisediment
Flooding: None

Map Unit Composition

Ruma and similar soils: 50 percent
Ursa and similar soils: 40 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
• Soils that contain less clay in the subsoil
• Areas of soils that have slopes of more than 35 percent or less than 18 percent
• Areas of soils that are less eroded than the Ruma and Ursa soils

Dissimilar components:
• The somewhat poorly drained Wakeland soils on narrow flood plains
• Areas where bedrock is exposed; along the lower slopes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

5491C—Ruma silty clay loam, karst, 5 to 12 percent slopes, severely eroded

Setting

Landform: Karst terrain on loess-covered till plains
Position on the landform: Convex summits between sinkholes and side slopes of the conical depressions

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Ruma and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that contain less clay in the subsoil than the Ruma soil
• Soils that contain more clay in the subsoil than the Ruma soil
• Areas of soils that are less eroded than the Ruma soil

Dissimilar soils:
• The somewhat poorly drained Wakeland soils on the bottom of the sinkholes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

5491D—Ruma silty clay loam, karst, 12 to 25 percent slopes, severely eroded

Setting

Landform: Karst terrain on loess-covered till plains
Position on the landform: Convex summits between sinkholes and side slopes of the conical depressions

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Ruma and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Ruma soil
- Soils that contain more clay in the subsoil than the Ruma soil
- Areas of soils that are less eroded than the Ruma soil

Dissimilar soils:
- The somewhat poorly drained Wakeland soils on the bottom of the sinkholes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

5491G—Ruma silt loam, karst, 25 to 60 percent slopes

Setting

Landform: Karst terrain on loess-covered till plains
Position on the landform: Convex summits between sinkholes and side slopes of the conical depressions

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Ruma and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Ruma soil
- Soils that have glacial till in the substratum
- Areas of soils that are eroded

Dissimilar components:
- The somewhat poorly drained Wakeland soils on the bottom of the sinkholes
- Areas where bedrock is exposed; near the bottom of the sinkholes

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Sarpy Series

Taxonomic classification: Mixed, mesic Typic Udipsamments

Typical Pedon for MLRA 115B

Sarpy fine sand, in a gently sloping area on a natural levee, in a cultivated field, at an elevation of about 393 feet above mean sea level; on Meissner Island about 2 miles northwest of Valmeyer, in Monroe County, Illinois; approximately 2,060 feet west and 2,280 feet south of the northeast corner of sec. 6, T. 3 S., R. 11 W.; USGS Valmeyer, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 18 minutes 23 seconds N. and long. 90 degrees 21 minutes 50 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) fine sand, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; common very fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.
C1—9 to 19 inches; dark grayish brown (10YR 4/2)

fine sand; single grain; loose; few very fine roots; strongly effervescent; slightly alkaline; gradual smooth boundary.

C2—19 to 29 inches; dark grayish brown (10YR 4/2) fine sand; single grain; loose; few very fine roots; few coarse faint brown (10YR 4/3) masses of iron accumulation in the matrix; few fine dark masses of iron-manganese accumulation; strongly effervescent; slightly alkaline; gradual smooth boundary.

C3—29 to 56 inches; dark grayish brown (10YR 4/2) fine sand; single grain; loose; few very fine roots; common medium faint brown (10YR 4/3) masses of iron accumulation in the matrix; common fine dark masses of iron-manganese accumulation; strongly effervescent; slightly alkaline; gradual smooth boundary.

C4—56 to 60 inches; dark grayish brown (10YR 4/2) fine sand; single grain; loose; common medium faint brown (10YR 4/3) masses of iron accumulation in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Texture of the particle-size control section: Less than 10 percent silt plus clay and less than 40 percent silt plus clay plus very fine sand
Reaction: Neutral to moderately alkaline
Carbonates: Throughout the control section

Ap or A horizon:
Hue—10YR or 2.5Y
Value—3 to 5 (4 to 6 dry)
Chroma—1 to 3
Texture—sand, loamy sand, loamy fine sand, fine sand, or fine sandy loam; a thin overwash of finer materials, such as silt loam or silty clay loam, in some pedons

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—stratified loamy fine sand, loamy sand, fine sand, or sand

3092B—Sarpy fine sand, 2 to 5 percent slopes, frequently flooded

Setting

Landform: Flood plains
Position on the landform: Natural levees and flood-plain splays

Soil Properties and Qualities

Drainage class: Excessively drained
Dominant parent material: Sandy alluvium
Flooding frequency: Frequent

Map Unit Composition

Sarpy and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that have thin strata of silt loam, silty clay loam, and clay loam throughout
• Soils that are not calcareous in the surface layer and upper part of the substratum
• Areas of soils that have short, steep slopes; along old channels

Dissimilar soils:
• The somewhat poorly drained Blake soils in swales and depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Shaffton Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon for MLRA 115B

Shaffton clay loam, on a gently undulating flood plain in a cultivated field, at an elevation of about 405 feet above mean sea level; about 2.5 miles west of Columbia, in Monroe County, Illinois; approximately 280 feet east and 350 feet north of the southwest corner of sec. 18, T. 1 S., R. 10 W.; USGS Oakville, Missouri-Illinois, topographic quadrangle; lat. 38 degrees 26 minutes 37 seconds N. and long. 90 degrees 15 minutes 20 seconds W., NAD 27:

Ap—0 to 10 inches; very dark gray (10YR 3/1) clay loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

Bw1—10 to 16 inches; brown (10YR 4/3) clay loam;

moderate medium prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and few fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Bw2—16 to 21 inches; brown (10YR 4/3) clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and few fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Bw3—21 to 27 inches; brown (10YR 4/3) fine sandy loam; weak medium prismatic structure parting to weak medium angular blocky; very friable; few very fine roots; few faint very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine distinct gray (10YR 5/1) iron depletions and few fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Bw4—27 to 33 inches; brown (10YR 4/3) fine sandy loam; weak medium prismatic structure parting to weak medium angular blocky; very friable; few very fine roots; few faint very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine distinct gray (10YR 5/1) iron depletions and few fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

BC—33 to 43 inches; brown (10YR 4/3) fine sandy loam; weak medium prismatic structure parting to weak medium angular blocky; very friable; few very fine roots; many medium distinct gray (10YR 5/1) iron depletions and common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

CB—43 to 53 inches; brown (10YR 5/3) silt loam; weak medium prismatic structure; very friable; few very fine roots; common medium distinct gray (10YR 5/1) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Cg—53 to 60 inches; 70 percent gray (10YR 5/1) and 30 percent strong brown (7.5YR 5/6), stratified fine sandy loam and silt loam; massive; very friable; few very fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid.

Range in Characteristics

Depth to the base of soil development: 30 to 60 inches
Thickness of the mollic epipedon: 10 to 15 inches
Depth to carbonates (if they occur): More than 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 to 3
Texture—silty clay loam, clay loam, silt loam, or loam

Bw horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 or 3
Texture—silty clay loam, clay loam, silt loam, loam, fine sandy loam, or sandy loam

BC and C horizons:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 to 3
Texture—commonly stratified; ranges from silty clay loam to coarse sand

8183A—Shaffton clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Gently undulating flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Loamy alluvium
Flooding frequency: Occasional

Map Unit Composition

Shaffton and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that contain more sand in the subsoil than the Shaffton soil
- Soils that contain more clay throughout than the Shaffton soil

• Areas of soils that are more sloping than the Shaffton soil

Dissimilar soils:
• The well drained Landes soils on the higher natural levees
• The poorly drained Fults and Ambraw soils in depressions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Sonsac Series

Taxonomic classification: Clayey-skeletal, mixed, active, mesic Typic Hapludalfs

Typical Pedon for MLRA 115B

Sonsac flaggy silt loam, on a west-facing slope of 30 percent in an area of mixed hardwoods, at an elevation of about 560 feet above mean sea level; about 3.5 miles northwest of Renault, in Monroe County, Illinois; approximately 3,460 feet south and 3,620 feet east of the northwest corner of sec. 15, T. 4 S., R. 10 W., in the Renault Grant; USGS Renault, Illinois, topographic quadrangle; lat. 38 degrees 11 minutes 08 seconds N. and long. 90 degrees 11 minutes 22 seconds W., NAD 27:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) flaggy silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; common limestone flagstones 1 to 3 feet long and 4 to 6 inches thick on the surface; about 20 percent flagstones 3 to 15 inches long and 15 percent rock fragments less than 3 inches long; slightly acid; abrupt smooth boundary.

Bt1—3 to 6 inches; dark yellowish brown (10YR 4/4) flaggy silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; about 15 percent flagstones 3 to 15 inches long and 15 percent rock fragments less than 3 inches long; neutral; clear smooth boundary.

2Bt2—6 to 12 inches; strong brown (7.5YR 5/6) very flaggy silty clay; moderate fine subangular blocky structure; firm; few very fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds and stones; about 20 percent flagstones 3 to 15 inches long and 25 percent rock fragments less than 3 inches long; neutral; clear smooth boundary.

2Bt3—12 to 20 inches; strong brown (7.5YR 5/6) very flaggy silty clay; moderate fine subangular blocky structure; firm; few very fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds and stones; about 35 percent flagstones 3 to 15 inches long and 20 percent rock fragments less than 3 inches long; slightly alkaline; clear smooth boundary.

2Bt4—20 to 24 inches; strong brown (7.5YR 5/6) extremely flaggy silty clay; moderate fine subangular blocky structure; very firm; few very fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds and stones; about 45 percent flagstones 3 to 15 inches long and 20 percent rock fragments less than 3 inches long; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2R—24 inches; very pale brown (10YR 7/4) limestone.

Range in Characteristics

Depth to the base of soil development: 20 to 40 inches
Depth to lithic contact: 20 to 40 inches

A or Ap horizon:
Hue—7.5YR or 10YR
Value—3 or 4 (5 or 6 dry)
Chroma—2 or 3
Texture—silt loam

BA horizon (if it occurs):
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—3 to 6
Texture—silt loam

E horizon (if it occurs):
Hue—7.5YR or 10YR
Value—5 or 6 (7 or 8 dry)
Chroma—3 to 6
Texture—silt loam

Bt horizon (if it occurs):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—silt loam, loam, or silty clay loam

2Bt horizon:
Hue—2.5YR to 10YR
Value—3 to 6
Chroma—3 to 8
Texture—silty clay or clay

658F—Sonsac flaggy silt loam, 18 to 35 percent slopes

Setting

Landform: Uplands
Position on the landform: Side slopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Residuum derived from limestone
Flooding: None

Map Unit Composition

Sonsac and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that have a thicker subsoil than that of the Sonsac soil
- Soils in which the subsoil formed in a paleosol

Dissimilar components:
- Areas of soils that are shallow to bedrock
- Areas of exposed bedrock and vertical bedrock escarpments

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Stookey Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon for MLRA 115B

Stookey silt loam, on a west-facing, convex slope of 40 percent, in an area of mixed hardwoods, at an elevation of about 530 feet above mean sea level; about 1 mile northeast of Fults, in Monroe County, Illinois; approximately 2,300 feet north of the intersection of Sutterville Road and Fults Road and 125 feet west of Sutterville Road; T. 4 S., R. 10 W., in Renault Grant; USGS Renault, Illinois, topographic quadrangle: lat. 38 degrees 10 minutes 27 seconds N. and long. 90 degrees 12 minutes 05 seconds W., NAD 27:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many very fine and fine roots; about 16 percent clay; moderately acid; abrupt smooth boundary.

E—3 to 6 inches; dark yellowish brown (10YR 4/4) silt loam, light yellowish brown (10YR 6/4) dry; weak medium platy structure parting to weak medium granular; friable; common very fine and fine roots; about 28 percent clay; strongly acid; clear smooth boundary.

Bt1—6 to 13 inches; brown (7.5YR 4/4) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; common faint continuous brown (7.5YR 4/4) clay films on faces of peds; about 25 percent clay; strongly acid; clear smooth boundary.

Bt2—13 to 24 inches; brown (7.5YR 4/4) silt loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; common very fine and fine roots; common faint continuous brown (7.5YR 4/4) clay films on faces of peds; about 24 percent clay; strongly acid; gradual smooth boundary.

Bt3—24 to 35 inches; brown (7.5YR 5/4) silt loam; weak fine prismatic structure parting to weak fine subangular blocky; friable; few very fine roots; common faint continuous brown (7.5YR 4/4) clay films on faces of peds; about 23 percent clay; moderately acid; gradual smooth boundary.

Bt4—35 to 53 inches; brown (7.5YR 5/4) silt loam; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few faint patchy brown (7.5YR 4/4) clay films on faces of peds; about 22 percent clay; moderately acid; gradual smooth boundary.

BC—53 to 62 inches; brown (7.5YR 4/4) silt loam; weak medium subangular blocky structure; friable; few very fine roots; about 20 percent clay; slightly acid; gradual smooth boundary.

C—62 to 80 inches; dark yellowish brown (10YR 4/4) silt loam; massive; very friable; few very fine roots; about 17 percent clay; neutral.

Range in Characteristics

Depth to the base of soil development: 40 to more than 80 inches
Thickness of the loess: 80 inches or more
Texture of the particle-size control section: Averages

between 18 and 27 percent clay and less than 7 percent sand coarser than very fine sand
Depth to carbonates (if they occur): More than 60 inches
Other features: Some pedons have an EB or a BE horizon.

A horizon:
Hue—10YR
Value—3 to 5 (5 to 7 dry)
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 to 6 (6 to 8 dry)
Chroma—2 to 4
Texture—silt loam

Bt horizon and BC horizon (if it occurs):
Hue—5YR, 7.5YR, and 10YR
Value—4 to 6
Chroma—3 to 6
Texture—typically silt loam; silty clay loam in thin subhorizons in some pedons

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silt

216G—Stookey silt loam, 35 to 70 percent slopes

Setting

Landform: Loess bluffs
Position on the landform: Hillslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Thick, coarse loess
Flooding: None

Map Unit Composition

Stookey and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that contain more clay in the subsoil than the Stookey soil
- Soils that contain carbonates in the subsoil
- Areas of soils that are less sloping than the Stookey soil

Dissimilar components:
- The well drained Sonsac soils, which formed in loess and in limestone residuum
- The well drained Lacrescent soils, which formed in colluvium
- Areas of bedrock outcrops and escarpments

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Tice Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon for MLRA 115B

Tice silty clay loam, in a nearly level area in a cultivated field, at an elevation of about 398 feet above mean sea level; about 0.5 mile northwest of Chalfin Bridge, in Monroe County, Illinois; approximately 550 feet southwest of railroad tracks and 150 feet southeast of Outlet Road in parcel S. 707, T. 4 S., R. 11 W; USGS Selma, Illinois-Missouri, topographic quadrangle; lat. 38 degrees 12 minutes 53 seconds N. and long. 90 degrees 16 minutes 37 seconds W., NAD 27:

Ap—0 to 9 inches; very dark brown (10YR 2/2) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many very fine roots; about 28 percent clay; neutral; abrupt smooth boundary.
A—9 to 16 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; many very fine roots; common continuous distinct very dark brown (10YR 2/2) organic coatings on faces of peds; about 29 percent clay; neutral; clear smooth boundary.
Bw1—16 to 24 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many continuous distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; about 30 percent clay; neutral; clear smooth boundary.

Bw2—24 to 35 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; firm; common very fine roots; many continuous distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; about 32 percent clay; neutral; clear smooth boundary.

Bg1—35 to 47 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; many continuous distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine rounded dark brown (7.5YR 3/3) masses of iron-manganese accumulation; about 34 percent clay; neutral; gradual smooth boundary.

Bg2—47 to 61 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; many continuous prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine and medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine rounded dark brown (7.5YR 3/3) masses of iron-manganese accumulation; about 36 percent clay; neutral; gradual smooth boundary.

Bg3—61 to 72 inches; grayish brown (10YR 5/2) silty clay loam; weak fine prismatic structure; firm; very fine roots; common continuous distinct very dark grayish brown (10YR 3/2) organo-clay films on vertical faces of peds; many fine and medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine and medium irregular very dark brown (7.5YR 2.5/2) and strong brown (7.5YR 4/6) masses of iron-manganese accumulation; about 33 percent clay; slightly acid; clear smooth boundary.

BCg—72 to 80 inches; grayish brown (10YR 5/2) silty clay loam; weak medium prismatic structure; firm; few very fine roots; few discontinuous faint dark grayish brown (10YR 4/2) clay films on vertical faces of peds and in pores and root channels; common fine and medium faint brown (10YR 4/3) and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine and medium irregular black (7.5YR 2.5/1) masses of iron-manganese accumulation; about 38 percent clay; slightly acid.

Range in Characteristics

Depth to the base of soil development: 30 to more than 80 inches
Thickness of the mollic epipedon: 10 to 24 inches
Texture of the particle-size control section: Averages between 22 and 35 percent clay and less than 15 percent fine sand or coarser
Other features: Some pedons have an AB or a BA horizon.

Ap or A horizon:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 or 2
Texture—silty clay loam or silt loam

Bw and Bg horizons:
Hue—10YR or 2.5Y; 5Y in some gleyed pedons below a depth of 50 inches
Value—4 or 5
Chroma—2 to 4; 1 in some gleyed pedons below a depth of 50 inches
Texture—silty clay loam or silt loam

BC or BCg horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—1 to 4
Texture—typically silty clay loam or silt loam; strata of loam, clay loam, or sandy loam in some pedons

Cg or C horizon (if it occurs):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 3
Texture—stratified silty clay loam, clay loam, loam, sandy loam, or silt loam

8284A—Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Silty clay loam alluvium
Flooding frequency: Occasional

Map Unit Composition

Tice and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
• Soils that contain more clay in the surface layer than the Tice soil
• Soils that contain more sand in the subsoil and substratum than the Tice soil
• Soils that contain less clay throughout than the Tice soil

Dissimilar soils:
• The poorly drained Ambraw and Beaucoup soils in the lower landform positions
• The well drained Landes soils on the higher natural levees

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

• "Crops and Pasture"
• "Forestland Management and Productivity"
• "Wildlife Habitat"
• "Engineering" and "Soil Properties"

Typic Hapludalfs

Taxonomic classification: Typic Hapludalfs

Typical Pedon for MLRA 114

Typic Hapludalfs, on a north-facing slope of 25 percent, in a wooded area on a lacustrine terrace riser, at an elevation of about 400 feet above mean sea level; about 4 miles southeast of Hecker, in Monroe County, Illinois; approximately 1,600 feet north and 240 feet west of the southeast corner of sec. 22, T. 3 S., R. 8 W.; USGS New Athens West, Illinois, topographic quadrangle; lat. 38 degrees 15 minutes 18 seconds N. and long. 89 degrees 57 minutes 45 seconds W., NAD 27:

A—0 to 6 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 5/3) dry; weak medium granular structure; friable; common very fine and fine roots; slightly acid; clear smooth boundary.

Bt1—6 to 14 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; common very fine and fine roots; common faint continuous (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—14 to 28 inches; dark yellowish brown (10YR 4/4) silty clay; moderate medium subangular blocky structure; firm; few very fine and fine roots; common distinct continuous (10YR 4/3) clay films on faces of peds; few fine irregular black (10YR 2/1) masses of iron-manganese accumulation; very strongly acid; clear smooth boundary.

Bt3—28 to 46 inches; yellowish brown (10YR 5/4) silty clay; weak medium subangular blocky structure; very firm; few very fine and fine roots; few distinct patchy (10YR 4/3) clay films on faces of peds; common fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; few fine irregular black (10YR 2/1) masses of iron-manganese accumulation; strongly acid; gradual smooth boundary.

C—46 to 60 inches; dark yellowish brown (10YR 4/4) silty clay; massive; very firm; few very fine and fine roots; few fine distinct grayish brown (10YR 5/2) iron depletions along root channels and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation; strongly acid.

Range in Characteristics

General features: Ranges are quite variable. The texture of the surface layer ranges from silt loam to silty clay, and the texture of the subsoil ranges from silty clay loam to clay. Carbonates are common in the C horizon but are near the surface in some pedons and do not occur in other pedons. Some pedons have till in the substratum, and some pedons have till intermingled with the lacustrine sediments.

8812F—Typic Hapludalfs, 18 to 35 percent slopes, occasionally flooded

Setting

Landform: Lake plains and lacustrine terraces
Position on the landform: Risers and escarpments

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Clayey lacustrine sediments and glacial till
Flooding frequency: Occasional

Map Unit Composition

Typic Hapludalfs and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
• Soils that formed only in glacial till
• Areas of soils that have slopes of less than 18 percent or more than 35 percent

Dissimilar soils:
- The poorly drained Birds soils on flood plains

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Ursa Series

Taxonomic classification: Fine, smectitic, mesic Chromic Vertic Hapludalfs

Typical Pedon for MLRA 114

Ursa silty clay loam, in an area of Ruma-Ursa silty clay loams, 18 to 35 percent slopes, severely eroded; on a northeast-facing lower backslope in a hayfield on a slope of 20 percent; at an elevation of about 470 feet above mean sea level; about 2 miles east of Floraville, in St. Clair County, Illinois; approximately 1,410 feet south and 600 feet west of the northeast corner of sec. 7, T. 2 S., R. 8 W.; USGS Millstadt, Illinois, topographic quadrangle; lat. 38 degrees 22 minutes 38 seconds N. and long. 90 degrees 01 minute 12 seconds W., NAD 27:

Ap—0 to 3 inches; mixed brown (10YR 4/3) and yellowish brown (10YR 5/4) silty clay loam, pale brown (10YR 6/3) and light yellowish brown (10YR 6/4) dry; moderate very fine subangular blocky structure; friable; many very fine and few fine roots; few fine rounded black (10YR 2/1) iron-manganese nodules; about 31 percent clay, 10 percent sand, and 1 percent pebbles; slightly acid; abrupt smooth boundary.

Bt1—3 to 8 inches; yellowish brown (10YR 5/4) clay loam; moderate fine subangular blocky structure; firm; common very fine and few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; common fine and medium rounded black (10YR 2/1) iron-manganese nodules; about 37 percent clay, 22 percent sand, and 2 percent pebbles; strongly acid; clear smooth boundary.

Bt2—8 to 17 inches; yellowish brown (10YR 5/6) clay; moderate medium subangular blocky structure; very firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; common fine and medium rounded black (10YR 2/1) iron-manganese nodules; about 48 percent clay, 25 percent sand, and 5 percent pebbles; strongly acid; clear smooth boundary.

Bt3—17 to 29 inches; yellowish brown (10YR 5/6) silty clay; weak fine prismatic structure parting to moderate fine and medium angular blocky; very firm; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine irregular black (10YR 2/1) masses of iron-manganese accumulation; about 45 percent clay, 12 percent sand, and 4 percent pebbles; moderately acid; gradual smooth boundary.

Bt4—29 to 38 inches; yellowish brown (10YR 5/6) silty clay; weak medium prismatic structure parting to weak medium angular blocky; very firm; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine and medium irregular black (10YR 2/1) and strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 42 percent clay, 13 percent sand, and 2 percent pebbles; slightly acid; gradual smooth boundary.

Bt5—38 to 54 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and few prominent black (10YR 2/1) iron-manganese coatings on vertical faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine irregular black (10YR 2/1) and strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 38 percent clay, 15 percent sand, and 1 percent pebbles; neutral; clear smooth boundary.

Bt6—54 to 68 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; common prominent dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) clay films on faces of peds and common prominent black (10YR 2/1) iron-manganese coatings on vertical faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) and strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 36 percent clay, 15 percent sand, and 1 percent pebbles; neutral; gradual smooth boundary.

BCt—68 to 80 inches; yellowish brown (10YR 5/4) clay loam; weak medium prismatic structure; firm; common prominent grayish brown (10YR 5/2) clay films on vertical faces of peds; common medium

faint pale brown (10YR 6/3) iron depletions and common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine and medium irregular black (10YR 2/1) and strong brown (7.5YR 5/6) masses of iron-manganese accumulation; about 31 percent clay, 25 percent sand, and 2 percent pebbles; neutral.

Range in Characteristics

Depth to the base of soil development: 50 to more than 80 inches
Thickness of the loess or silty pedisediment: 0 to 20 inches
Depth to carbonates (if they occur): More than 60 inches
Other features: Pedons in uneroded areas typically have an E horizon and a BE or Bt horizon that formed in loess or pedisediment above the till. Some pedons have buried horizons of the paleosol beneath the modern soil.

Ap or A horizon:
Hue—7.5YR or 10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 to 4
Texture—typically silt loam or loam; silty clay loam, clay loam, or clay included in the range for pedons in eroded areas

Bt or 2Bt horizon (formed in till):
Hue—7.5YR or 10YR; 2.5Y or 5Y in the lower part of some pedons
Value—4 to 6
Chroma—3 to 8; 1 to 8 in the lower part of some pedons
Texture—loam, clay loam, silty clay loam, silty clay, or clay

BC or 2BC horizon (if it occurs):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—loam, clay loam, silty clay, or clay

C or 2C horizon (if it occurs):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—loam, clay loam, silty clay, or clay

Virden Series

Taxonomic classification: Fine, smectitic, mesic Vertic Argiaquolls

Typical Pedon for MLRA 114

Virden silt loam, in a slightly depressional area in a cultivated field, at an elevation of about 421 feet above mean sea level; about 2 miles east of Mascoutah, in St. Clair County, Illinois; approximately 1,410 feet south and 2,000 feet east of the northwest corner of sec. 34, T. 1 N., R. 6 W.; USGS Mascoutah, Illinois, topographic quadrangle; lat. 38 degrees 29 minutes 28 seconds N. and long. 89 degrees 45 minutes 14 seconds W., NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; many very fine roots; about 25 percent clay; neutral; clear smooth boundary.
A—10 to 15 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure parting to moderate medium granular; firm; common very fine roots; few fine rounded very dark brown (7.5YR 2.5/2) masses of iron-manganese accumulation; about 26 percent clay; neutral; clear smooth boundary.
Btg1—15 to 22 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; common very fine roots; many distinct black (10YR 2/1) organo-clay films on faces of peds; few fine distinct brown (10YR 4/3) masses of iron accumulation in the matrix; few fine rounded black (N 2.5/0) iron-manganese nodules with sharp boundaries; about 38 percent clay; neutral; clear smooth boundary.
Btg2—22 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; strong medium prismatic structure parting to moderate medium angular blocky; firm; common very fine roots; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine rounded strong brown (7.5YR 4/6) masses of iron-manganese accumulation and few medium rounded black (N 2.5/0) iron-manganese nodules with sharp boundaries; about 37 percent clay; slightly acid; clear smooth boundary.
Btg3—38 to 52 inches; gray (2.5Y 5/1) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; many distinct dark gray (10YR 4/1) clay films on faces of peds; common fine and medium prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation and few medium rounded black (N 2.5/0) iron-manganese nodules

with clear strong brown (7.5YR 4/6) boundaries; about 36 percent clay; slightly acid; clear smooth boundary.

Btg4—52 to 66 inches; gray (2.5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak coarse angular blocky; firm; few very fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium and coarse rounded black (N 2.5/0) iron-manganese nodules with clear strong brown (7.5YR 4/6) boundaries; about 33 percent clay; neutral; gradual smooth boundary.

BCtg—66 to 74 inches; gray (2.5Y 6/1) silty clay loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct dark gray (10YR 4/1) clay films lining root channels; common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation; about 28 percent clay; neutral; gradual smooth boundary.

Cg—74 to 80 inches; gray (2.5Y 6/1) silt loam; massive; friable; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine and medium irregular strong brown (7.5YR 4/6) masses of iron-manganese accumulation; about 26 percent clay; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 40 to more than 60 inches
Thickness of the mollic epipedon: 10 to 24 inches; the mollic epipedon commonly extends into the upper part of the B horizon
Thickness of the loess: 60 to more than 80 inches
Depth to carbonates (if they occur): More than 50 inches

Ap, A, or AB horizon:
Hue—10YR
Value—2 or 3 (4 or 5 dry)
Chroma—1 or 2
Texture—silt loam or silty clay loam

Btg and BCtg horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture—silty clay loam, silty clay, or silt loam

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

50A—Virden silt loam, 0 to 2 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Nearly level or slightly depressional parts of broad interfluves

Soil Properties and Qualities

Drainage class: Poorly drained
Dominant parent material: Loess; or loess and the underlying silty pedisediment
Flooding: None

Map Unit Composition

Virden and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have an incipient E horizon
- Soils that contain less clay in the subsoil than the Virden soil
- Soils that contain a concentration of exchangeable sodium in the subsoil

Dissimilar soils:
- Small areas of depressional soils that remain wet for periods that extend into the growing season

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Wakeland Series

Taxonomic classification: Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents

Typical Pedon for MLRA 114 and MLRA 115B

Wakeland silt loam, in a nearly level area in a cultivated field, at an elevation of about 485 feet above mean sea level; about 2 miles northeast of Highland, in Madison County, Illinois; approximately 1,600 feet north and 1,330 feet east of the center of sec. 34, T. 4

N., R. 5 W.; USGS Grantfork, Illinois, topographic quadrangle; lat. 38 degrees 45 minutes 18 seconds N. and long. 89 degrees 38 minutes 27 seconds W., NAD 27:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; very thin lenses of light gray (10YR 7/1) silt and very fine sand; weak fine granular structure; friable; many very fine and few fine roots; few fine continuous tubular pores; neutral; clear smooth boundary.

Cg1—8 to 34 inches; dark grayish brown (10YR 4/2) silt loam; thin lenses of light brownish gray (10YR 6/2) silt and very fine sand; massive; friable; few very fine roots; common very fine and fine continuous tubular pores; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; neutral; gradual smooth boundary.

Cg2—34 to 44 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; few very fine roots; few very fine continuous tubular pores; common medium faint light brownish gray (10YR 6/2) iron depletions and common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Cg3—44 to 68 inches; grayish brown (10YR 5/2) silt loam; massive; friable; common medium faint dark grayish brown (10YR 4/2) and light brownish gray (10YR 6/2) iron depletions and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few medium rounded dark brown (7.5YR 3/2) iron-manganese nodules; slightly acid; clear smooth boundary.

Ab—68 to 80 inches; very dark grayish brown (10YR 3/2) silt loam; moderate fine subangular blocky structure; friable; few fine rounded black (10YR 2/1) iron-manganese nodules; slightly acid.

Range in Characteristics

Texture of the particle-size control section: Averages between 10 and 18 percent clay and less than 15 percent fine sand or coarser

Depth to a buried soil (if it occurs): More than 60 inches

Other features: Some pedons have an A horizon. This horizon is 1 to 3 inches thick.

Ap horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 to 4
Texture—silt loam

A horizon (if it occurs):
Value—3 or 4 (5 or 6 dry)
Chroma—1

C or Cg horizon (upper part):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—1 to 4
Texture—silt loam

C or Cg horizon (lower part):
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 to 6
Texture—silt loam; loam and thin strata of fine sandy loam or sandy loam below a depth of 40 inches

3333A—Wakeland silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Silty alluvium
Flooding frequency: Frequent

Map Unit Composition

Wakeland and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are more acid than the Wakeland soil
- Soils that contain more sand in the substratum than the Wakeland soil
- Soils that have a dark buried soil above a depth of 60 inches

Dissimilar soils:
- The poorly drained Birds soils in the lower landform positions
- The moderately well drained Wilbur soils; in positions closer to the streams than those of the Wakeland soil

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”

- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

3333L—Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Silty alluvium
Flooding frequency: Frequent

Map Unit Composition

Wakeland and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are more acid than the Wakeland soil
- Soils that contain more sand in the substratum than the Wakeland soil
- Soils that have a dark buried soil above a depth of 60 inches

Dissimilar soils:
- The poorly drained Birds soils in the lower landform positions
- The moderately well drained Wilbur soils; in positions closer to the streams than those of the Wakeland soil

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

8333A—Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Dominant parent material: Silty alluvium
Flooding frequency: Occasional

Map Unit Composition

Wakeland and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are more acid than the Wakeland soil
- Soils that contain more sand in the substratum than the Wakeland soil
- Soils that have a dark buried soil above a depth of 60 inches

Dissimilar soils:
- The poorly drained Birds soils in the lower landform positions
- The moderately well drained Wilbur soils; in positions closer to the streams than those of the Wakeland soil

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Westmore Series

Taxonomic classification: Fine-silty, mixed, active, mesic Typic Hapludalfs

Typical Pedon for MLRA 114 and MLRA 115B

Westmore silt loam, in an area of Westmore-Neotoma complex, 18 to 35 percent slopes; on a slope of 27 percent, on a west-facing backslope in an area of mixed hardwoods, at an elevation of about 600 feet above mean sea level; about 2.5 miles northwest of Ames, in Monroe County, Illinois; approximately 1,300 feet south and 2,280 feet west of the northeast corner of sec. 20, T. 4 S., R. 9 W.; USGS Ames, Illinois, topographic quadrangle; lat. 38 degrees 10 minutes 33 seconds N. and long. 90 degrees 07 minutes 01 second W., NAD 27:

A—0 to 2 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.

E—2 to 6 inches; brown (10YR 5/3) silt loam; moderate fine subangular blocky structure; friable; few very fine roots; few fine distinct brown (7.5YR 4/4) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

BE—6 to 10 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable; few very fine roots; strongly acid; clear smooth boundary.

Bt1—10 to 16 inches; strong brown (7.5YR 5/6) silt loam; moderate fine subangular blocky structure; friable; few very fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—16 to 22 inches; strong brown (7.5YR 5/6) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; strongly acid; clear smooth boundary.

2Bt3—22 to 27 inches; brown (7.5YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; common prominent very pale brown (10YR 7/3) (dry) clay depletions and common faint brown (7.5YR 4/4) clay films on faces of peds; few fine rounded and irregular iron-manganese concretions; about 5 percent fine sandstone fragments; strongly acid; clear smooth boundary.

2Bt4—27 to 32 inches; strong brown (7.5YR 4/6) silty clay; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common prominent very pale brown (10YR 7/3) (dry) clay depletions and common faint brown (7.5YR 4/4) clay films on faces of peds; few fine prominent brown (7.5YR 5/2) iron depletions and few fine prominent dark red (2.5YR 3/6) masses of iron accumulation in the matrix; few medium rounded and irregular iron-manganese concretions; about 5 to 10 percent fine sandstone fragments; strongly acid; abrupt smooth boundary.

2Bt5—32 to 60 inches; variegated strong brown (7.5YR 5/6) and brown (7.5YR 5/2) clay; weak medium prismatic structure; extremely firm; few very fine roots; few faint brown (7.5YR 4/4) clay films on faces of peds; common fine prominent dark red (2.5YR 3/6) masses of iron accumulation in the matrix; about 10 to 15 percent sandstone fragments; strongly acid.

Range in Characteristics

Depth to the base of soil development: 40 to 72 inches
Depth to bedrock: 48 inches or more
Thickness of the loess or other silty material: 20 to 36 inches
Texture of the particle-size control section: Averages between 25 and 35 percent clay and between 2 and 15 percent fine sand or coarser
Other features: Some pedons have an A horizon. This horizon is 1 to 5 inches thick.

Ap horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 to 4
Texture—silt loam; silty clay loam in some pedons in severely eroded areas

A horizon (if it occurs):
Hue—10YR
Value—2 to 4 (4 to 6 dry)
Chroma—1 to 3

E horizon (if it occurs):
Hue—10YR or 7.5YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam or silty clay loam

2Bt horizon and 2BC horizon (if it occurs):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay, clay, silty clay loam, clay loam, or the channery analogs of these textures

2C horizon (if it occurs):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 6
Texture—clay, silty clay, sandy clay, clay loam, silty clay loam, or the channery analogs of these textures

988F—Westmore-Neotoma complex, 18 to 35 percent slopes

Setting

Landform: Uplands
Position on the landform: Hillslopes

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Thin mantle of loess or silty colluvium and residuum derived from acid siltstone or sandstone
Flooding: None

Map Unit Composition

Westmore and similar soils: 50 percent
Neotoma and similar soils: 40 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that have sandstone bedrock above a depth of 48 inches
- Soils that contain more clay in the subsoil
- Soils that contain less clay in the subsoil

Dissimilar components:
- Small areas of bedrock outcrops and escarpments

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- "Crops and Pasture"
- "Forestland Management and Productivity"
- "Wildlife Habitat"
- "Engineering" and "Soil Properties"

Wilbur Series

Taxonomic classification: Coarse-silty, mixed, superactive, mesic Fluvaquentic Eutrudepts

Typical Pedon for MLRA 114 and MLRA 115B

Wilbur silt loam, in a nearly level area in a cultivated field, at an elevation of about 445 feet above mean sea level; about 1 mile north of Columbia, in Monroe County, Illinois; approximately 1,200 feet west and 1,100 feet south of the northeast corner of sec. 9, T. 1 S., R. 10 W.; USGS Columbia, Illinois, topographic quadrangle; lat. 38 degrees 28 minutes 07 seconds N. and long. 90 degrees 12 minutes 15 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common very fine roots; few fine constricted tubular pores; about 18 percent clay; slightly acid; clear smooth boundary.

Bw1—7 to 15 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; few very fine roots; common fine and medium continuous tubular pores; few medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; about 17 percent clay; neutral; clear smooth boundary.

Bw2—15 to 22 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; few very fine roots; few fine and medium continuous tubular pores; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; few fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation and few fine and medium rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; about 16 percent clay; neutral; clear smooth boundary.

Bw3—22 to 41 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; few very fine roots; common very fine and fine constricted tubular pores; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; common fine irregular strong brown (7.5YR 5/6) masses of iron-manganese accumulation and few fine rounded black (7.5YR 2.5/1) iron-manganese nodules with clear strong brown (7.5YR 5/6) boundaries; few thin light yellowish brown (10YR 6/4) strata; about 16 percent clay; neutral; clear smooth boundary.

Cg—41 to 65 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; few very fine roots; few fine constricted tubular pores; few fine distinct dark yellowish brown (10YR 3/4) masses of iron accumulation in the matrix; common fine irregular black (7.5YR 2.5/1) and brown (7.5YR 4/4) masses of iron-manganese accumulation; about 22 percent clay; neutral.

Range in Characteristics

Depth to the base of the cambic horizon: 24 to 42 inches
Depth to a buried soil (if it occurs): More than 60 inches
Texture of the particle-size control section: Averages between 10 and 18 percent clay, less than 15 percent fine sand or coarser, and less than 15 percent very fine sand
Content of rock fragments: Less than 1 percent throughout
Reaction: Moderately acid to slightly alkaline

Ap or A horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 to 4
Texture—silt loam

Bw horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam

C or Cg horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam; loam and thin strata of fine sandy loam or sandy loam included below a depth of 40 inches

3336A—Wilbur silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Silty alluvium
Flooding frequency: Frequent

Map Unit Composition

Wilbur and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a dark buried soil above a depth of 60 inches
- Soils that contain more sand in the subsoil and substratum than the Wilbur soil
- Soils that contain more clay in the subsoil than the Wilbur soil

Dissimilar soils:
- The poorly drained Birds and somewhat poorly drained Wakeland soils in the lower landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

8336A—Wilbur silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Silty alluvium
Flooding frequency: Occasional

Map Unit Composition

Wilbur and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a dark buried soil above a depth of 60 inches
- Soils that contain more sand in the subsoil and substratum than the Wilbur soil
- Soils that contain more clay in the subsoil than the Wilbur soil

Dissimilar soils:
- The somewhat poorly drained Dupo and Wakeland soils in the lower landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Winfield Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon for MLRA 115B

Winfield silt loam, on a south-facing, convex slope of 3 percent, in a cultivated field, at an elevation of about 540 feet above mean sea level; about 3 miles north of O’Fallon, in St. Clair County, Illinois; approximately 205 feet east and 610 feet south of the northwest corner of sec. 9, T. 2 N., R. 7 W.; USGS Collinsville, Illinois, topographic quadrangle; lat. 38 degrees 38 minutes 32 seconds N. and long. 89 degrees 53 minutes 27 seconds W., NAD 27:

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; many very fine roots; about 22 percent clay; neutral; abrupt smooth boundary.
E—9 to 13 inches; brown (10YR 5/3) silt loam, pale

brown (10YR 6/3) dry; weak medium platy structure parting to moderate very fine subangular blocky; friable; common very fine roots; few faint light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine rounded black (10YR 2/1) iron-manganese nodules with sharp boundaries; about 25 percent clay; moderately acid; clear smooth boundary.

Bt1—13 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; firm; common very fine roots; few distinct light gray (10YR 7/2) (dry) clay depletions along root channels; many distinct brown (10YR 4/3) clay films on faces of peds; common fine and medium rounded black (10YR 2/1) iron-manganese nodules with sharp strong brown (7.5YR 4/6) boundaries; about 33 percent clay; moderately acid; clear smooth boundary.

Bt2—21 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common very fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine rounded black (10YR 2/1) iron-manganese nodules with sharp strong brown (7.5YR 4/6) boundaries; about 32 percent clay; strongly acid; gradual smooth boundary.

Btg1—30 to 40 inches; light brownish gray (10YR 6/2) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine and medium distinct yellowish brown (10YR 5/4) and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation with clear strong brown (7.5YR 4/6) boundaries; about 30 percent clay; moderately acid; clear smooth boundary.

Btg2—40 to 56 inches; light brownish gray (10YR 6/2) silty clay loam; weak medium prismatic structure parting to weak medium and coarse subangular blocky; firm; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; many medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine and medium irregular black (10YR 2/1) masses of iron-manganese accumulation with clear strong brown (7.5YR 4/6) boundaries; about 28 percent clay; moderately acid; clear smooth boundary.

BCtg—56 to 62 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium angular blocky structure; friable; few very fine roots; few faint brown (10YR 5/3) clay films on faces of peds; common fine and medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common medium irregular black (10YR 2/1) masses of iron-manganese accumulation with diffuse strong brown (7.5YR 5/6) boundaries; about 25 percent clay; slightly acid; gradual smooth boundary.

Cg—62 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; common medium and coarse prominent strong brown (7.5YR 4/6) and few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium and coarse irregular black (10YR 2/1) masses of iron manganese accumulation with diffuse strong brown (7.5YR 5/6) boundaries; about 20 percent clay; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 35 to 65 inches

Thickness of the loess: 80 inches or more

Texture of the particle-size control section: Averages between 27 and 35 percent clay and less than 7 percent sand

Reaction: Very strongly acid to neutral

Other features: Some pedons have an A horizon less than 6 inches thick.

Ap horizon:
Hue—10YR
Value—4 or 5 (6 or 7 dry)
Chroma—2 or 3
Texture—silt loam

A horizon (if it occurs):
Value—3 or 4 (5 or 6 dry)
Chroma—2 or 3

E horizon (if it occurs):
Hue—10YR
Value—4 to 6 (6 to 8 dry)
Chroma—2 to 4
Texture—silt loam or silty clay loam

BE horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silty clay loam

Bt horizon (upper part):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam

Bt horizon (lower part) and Btg horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam or silty clay loam

C or Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam

477B—Winfield silt loam, 2 to 5 percent slopes

Setting

Landform: Loess-covered till plains
Position on the landform: Summits

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Winfield and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Winfield soil
- Soils that contain carbonates in the substratum
- Soils that are moderately eroded; near the edge of the mapped areas

Dissimilar soils:
- The well drained Menfro soils on the higher or more convex summits
- The somewhat poorly drained Caseyville soils in the lower landform positions

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

477C2—Winfield silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Loess-covered till plains
Position on the landform: Convex summits, shoulders, and backslopes

Soil Properties and Qualities

Drainage class: Moderately well drained
Dominant parent material: Loess
Flooding: None

Map Unit Composition

Winfield and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain less clay in the subsoil than the Winfield soil
- Soils that contain carbonates in the substratum
- Areas of soils that are severely eroded

Dissimilar soils:
- The well drained Menfro soils in the higher or more convex landform positions
- The somewhat poorly drained Caseyville soils at the head of drainageways

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Wirt Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Dystric Fluventic Eutrudepts

Typical Pedon for MLRA 114 and MLRA 115B

Wirt silt loam, in a nearly level area, in a pasture on a narrow flood plain, at an elevation of about 592 feet above mean sea level; about 3.5 miles northwest of Ames, in Monroe County, Illinois; approximately 100

feet west and 200 feet south of the center of sec. 8, T. 4 S., R. 9 W.; USGS Ames, Illinois, topographic quadrangle; lat. 38 degrees 12 minutes 02 seconds N. and long. 90 degrees 07 minutes 12 seconds W., NAD 27:

Ap—0 to 3 inches; mixed 80 percent brown (10YR 4/3) and 20 percent yellowish brown (10YR 5/4) silt loam, brown (10YR 5/3) dry; weak fine granular structure; friable; many very fine and fine roots; few medium rounded masses of iron-manganese accumulation; neutral; abrupt smooth boundary.

Bw1—3 to 13 inches; brown (10YR 4/3) silt loam; weak medium platy structure parting to weak fine granular; friable; common very fine roots; common fine faint dark yellowish brown (10YR 3/4), few fine faint brown (10YR 5/3), and common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine and medium rounded masses of iron-manganese accumulation; neutral; clear smooth boundary.

Bw2—13 to 21 inches; dark brown (10YR 3/3) silt loam; weak thick platy structure parting to weak fine granular; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine distinct pale brown (10YR 6/3) and common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine rounded masses of iron-manganese accumulation; about 2 percent pebbles; neutral; abrupt smooth boundary.

Bw3—21 to 26 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; few very fine roots; few fine faint pale brown (10YR 6/3), few fine distinct brown (7.5YR 4/4), and common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine rounded masses of iron-manganese accumulation; neutral; abrupt smooth boundary.

2Bw4—26 to 33 inches; dark yellowish brown (10YR 4/4) loam; weak fine subangular blocky structure; friable; few very fine roots; few fine faint pale brown (10YR 6/3) iron depletions and common medium distinct yellowish brown (10YR 5/6) and few fine distinct brown (7.5YR 4/4) masses of iron accumulation in the matrix; few fine rounded masses of iron-manganese accumulation; neutral; clear smooth boundary.

2C1—33 to 40 inches; yellowish brown (10YR 5/4) sandy loam; single grain; very friable; common fine distinct grayish brown (10YR 5/2) iron depletions and common fine distinct brown (7.5YR 4/4) masses of iron accumulation in the matrix; common medium irregular masses of iron-manganese accumulation; about 10 percent ferruginous and manganiferous sandstone gravel; neutral; abrupt smooth boundary.

2C2—40 to 44 inches; yellowish brown (10YR 5/4) gravelly loamy sand; single grain; friable; few medium distinct grayish brown (10YR 5/2) iron depletions and common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; few fine irregular masses of iron-manganese accumulation; about 35 percent ferruginous and manganiferous sandstone gravel; neutral; abrupt smooth boundary.

2C3—44 to 67 inches; yellowish brown (10YR 5/4) gravelly sandy loam; single grain; friable; common medium distinct grayish brown (10YR 5/2) iron depletions and common fine prominent strong brown (7.5YR 4/6 and 5/6) masses of iron accumulation in the matrix; few fine irregular masses of iron-manganese accumulation; about 15 percent ferruginous and manganiferous sandstone gravel; neutral.

Range in Characteristics

Depth to the base of the cambic horizon: 24 to 48 inches

Texture of the particle-size control section: Averages between 7 and 18 percent clay, between 16 and 40 percent fine sand and coarser sand, and less than 15 percent rock fragments

Reaction: Moderately acid to neutral

Ap or A horizon:

Hue—10YR

Value—3 to 5 (5 to 7 dry)

Chroma—2 to 4

Texture—silt loam, silt, fine sandy loam, or very fine sandy loam

Bw horizon:

Hue—10YR

Value—3 to 5

Chroma—3 to 6

Texture—loam, silt loam, sandy loam, fine sandy loam, or very fine sandy loam

C horizon:

Hue—10YR

Value—3 to 5

Chroma—3 to 6

Texture—loam, fine sandy loam, or sandy loam; the gravelly analogs of these textures included below a depth of 40 inches; strata of loamy fine sand, loamy sand, gravelly loamy fine sand, and gravelly loamy sand included below a depth of 40 inches

3226A—Wirt silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Soil Properties and Qualities

Drainage class: Well drained
Dominant parent material: Loamy alluvium
Flooding frequency: Frequent

Map Unit Composition

Wirt and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that contain less sand throughout than the Wirt soil
- Soils that contain rock fragments within a depth of 20 inches
- Soils that do not contain rock fragments above a depth of 60 inches

Dissimilar soils:
- The somewhat poorly drained Wakeland soils; in landform positions similar to those of the Wirt soil
- Soils that have bedrock within a depth of 60 inches

Management

For general and detailed information about managing this map unit, see the following sections of this publication:

- “Crops and Pasture”
- “Forestland Management and Productivity”
- “Wildlife Habitat”
- “Engineering” and “Soil Properties”

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair, poor*, and *very poor*.

Numerical Ratings

Numerical ratings are given in some of the tables. These ratings indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Soil Series and Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

About 167,000 acres in Monroe County is cropland; 8,000 acres is used for pasture (Illinois Department of Agriculture and USDA, 1997); and 25,000 to 27,000

acres is forestland. About 5,800 acres is water areas, such as ponds, lakes, and streams. In 1996, corn was planted on 45,000 acres, soybeans on 59,000 acres, wheat on 52,000 acres, and grain sorghum on 11,000 acres (Illinois Department of Agriculture and USDA, 1997). The acreage used for soybeans and wheat has increased in recent years because of popular use of a rotation of wheat double-cropped with soybeans. This rotation allows two cash crops to be harvested each year. The soils have good potential for continued crop production, especially if the latest production technology is applied. This soil survey can be used as a guide for applying the latest crop production technologies.

The demand for food and fiber has increased in recent years. As a result, some land of marginal quality has been used for crops. Much of this land is more susceptible to erosion than the more productive land. Also, the number of residential tracts has increased in parts of the county. These tracts commonly are in areas of prime farmland. If these trends continue, they could result in a significant decline in the quality and quantity of the land used for food and fiber.

The major soil management concerns affecting cropland in the county are water erosion, excessive permeability, surface crusting, poor tilth, wetness, ponding, restricted permeability, and droughtiness.

Erosion is a potential problem on approximately 70 percent of the cropland in the county. Erosion can be a problem on soils that have slopes of more than 2 percent, such as Atlas, Bunkum, Hickory, and Menfro soils.

Loss of the surface layer is damaging for several reasons. Soil productivity is reduced as the surface soil is removed and part of the subsoil is incorporated into the plow layer. The subsoil is generally lower in plant nutrients, lower in organic matter, and higher in clay content compared to the surface soil. As the content of organic matter decreases in the plow layer and the content of clay increases, soil tilth deteriorates, resulting in soil crusting and a reduced rate of water infiltration. Erosion results in the sedimentation of streams, rivers, road ditches, and lakes. This pollution caused by sedimentation reduces the quality of water for agriculture, for municipal and recreational uses, and for fish and wildlife. Removing the sediment generally is expensive. Controlling erosion helps to minimize this pollution and improves water quality.

Erosion-control measures include both cultural and structural practices. The most widely used practice in the county is a system of conservation tillage (fig. 6), such as mulch tillage or zero tillage. These systems can leave 30 to 90 percent of the surface covered with crop residue. Another cultural practice is a crop rotation that includes 1 or more years of close-growing grasses or legumes. If slopes are long and uniform, terraces and contour farming also are effective in controlling erosion.

Structural practices are needed in drainageways where concentrated runoff flows overland. Erosion can be controlled by establishing grassed waterways (fig. 7) or installing erosion-control structures.

Further information about erosion-control measures suitable for each kind of soil is provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Soils that have excessive permeability, such as Rocher and Sarpy soils, have the potential for ground-water contamination. These soils contain sandy deposits within a depth of 40 inches and are very rapidly permeable in the lower part of the profile.

Several measures can be used to limit the amount of deep leaching of nutrients and pesticides. On all soils, applications of fertilizer should be based on the results of soil tests. The local office of the Cooperative Extension Service can help in determining the proper kinds and amounts of nutrients to be used. Chemicals should be selected according to their solubility in water, their ability to bind with the soil, and the rate of their breakdown in the soil. Splitting chemical applications, particularly nitrogen, is beneficial. This practice, rather than a one-time application, reduces the chance for excessive leaching. Another measure is planting legumes in a crop rotation or as a cover crop. This practice adds nitrogen to the soil, thereby reducing the amount of nitrogen needed in chemical applications. The practice of crop rotation is also effective in limiting the build-up of weed and insect populations and thus reduces the amount of herbicides and insecticides needed per application. Finally, a rotation of small grain cover crops following fertilized corn crops can be effective in taking up some residual nitrogen from the soil.

Drainage systems have been installed in most areas of poorly drained and somewhat poorly drained soils used as cropland in the county. As a result, these soils are adequately drained for the crops commonly grown. Measures that maintain the drainage system are needed. Poorly drained soils, such as Burksville, Pierron, and Virden soils, have subsurface drainage. In addition, surface tile inlets or shallow surface ditches are needed to remove excess water in some areas of poorly drained soils. In some places, somewhat poorly drained soils are wet long enough that in some years productivity is reduced unless they are artificially

Figure 6.—A grassed waterway and a system of conservation tillage that leaves crop residue on the surface help to control erosion in this area of Bunkum and Homen soils.

drained. Somewhat poorly drained soils, such as Caseyville and Marine soils, have subsurface drainage.

Soil tilth is an important factor influencing the germination of seeds, the amount of runoff, and the rate of water infiltration. Soils that have good tilth are granular and porous and have a high content of organic matter.

Surface crusting can be a problem in areas of Marine and Pierron soils. The surface layer in these soils is silt loam and has a low content of organic matter. Generally, the structure of these soils is weak, and a crust forms on the surface during periods of intense rainfall. This crust is hard when dry. It inhibits seedling emergence, reduces the infiltration rate, and increases runoff and erosion. Regular additions of crop residue, manure, and other organic material improve soil structure and minimize crusting.

Poor tilth is also a problem on soils that have a surface layer of silty clay loam or silty clay. If poorly drained soils, such as Booker and Fults soils, are plowed when wet, the surface layer can become cloddy. The cloddiness hinders the preparation of a good seedbed. Tilling in the fall and leaving the soil surface rough with moderate amounts of crop residue generally result in good tilth in the spring. A system of strip tillage or ridge tillage may also be effective on these soils.

Restricted permeability in the soil can increase the susceptibility to erosion. As water movement slows within a soil, the rate of runoff increases. The slowly permeable Colp soils have a higher soil erodibility potential than the moderately permeable Winfield soils. The effects of restricted permeability can be controlled by applying a cropping system that leaves crop residue on the surface after planting, incorporating green manure crops or crop residue into the soil, and using conservation cropping systems.

Restricted permeability can also limit the effectiveness of drainage systems. In the slowly permeable Burksville soils, a narrower tile spacing is needed than in the moderately slowly permeable Virden soils in order to lower the water table effectively.

A low available water capacity limits the productivity

Figure 7.—A grassed waterway in an area of Bunkum soils.

of some soils used for crops in the county. The physical composition of these soils, such as Rocher and Sarpy soils, limits the amount of available water necessary for optimum plant growth. The effects of droughtiness in these soils can be minimized by reducing the amount of runoff and increasing the water-holding capacity of the soil. Using a conservation tillage system and returning crop residue and other organic material to the soil help to overcome droughtiness. Planting such crops as winter wheat can help to avoid the drought-prone season. Also, irrigation helps to overcome droughtiness.

Hay is a very important crop in the county for dairy and beef production and for people who own small acreages and have horses for recreational purposes (fig. 8). There are some permanent hay and pasture fields in the county, but most producers rotate their hay seeding between 1 to several years of row crops, such as corn and soybeans.

Proper management is needed on hayland to maintain or improve the life of desirable forage species, to maintain or improve the quality and quantity of forage, and to control erosion and reduce runoff. Hay may last as a vigorous crop for 4 or 5 years, depending on management and on the varieties seeded. Suitable hay plants include several legumes and grasses. Alfalfa is the most common legume grown for hay. It is often used in mixtures with smooth bromegrass and orchardgrass. Alfalfa is best suited to well drained soils, such as Menfro and Ruma soils. Red clover also is grown for hay. Measures that maintain or improve fertility are needed. The amount of lime and fertilizer to be added should be based on the results of soil tests, the needs of the plants, and the expected level of yields. Seed varieties should be selected in accordance with the soil properties and the drainage conditions of the tract of land.

Limitations Affecting Crops and Pasture

The management concerns affecting the use of the detailed soil map units in the survey area for crops and pasture are shown in table 6. The main concerns in managing cropland are controlling water erosion, soil wetness, and ponding; minimizing surface crusting; improving poor tilth; and limiting the effects of

excessive permeability, restricted permeability, and low available water capacity. The major management concerns affecting pasture are water erosion, soil fertility, low available water capacity, low pH, and equipment limitations.

Cropland

Generally, a combination of several practices is needed to control water erosion. Conservation tillage, stripcropping, contour farming, conservation cropping systems, crop residue management, diversions, and grassed waterways help to minimize excessive soil loss.

Wetness is a limitation in some areas used as cropland, and ponding is a hazard. Drainage systems consist of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these. Measures that maintain the drainage system are needed.

Practices that minimize surface crusting and improve soil tilth include incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage. Surface cloddiness can be controlled by avoiding tillage when the soil is too wet.

Excessive permeability can cause deep leaching of nutrients and pesticides. Selecting appropriate chemicals and using split application methods reduce the hazard of ground-water contamination.

Restricted permeability can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems.

Conserving moisture is needed in areas where the soils have a low available water capacity. It primarily involves reducing the evaporation and runoff rates and increasing the rate of water infiltration. Applying

Figure 8.—Horses in a pasture in a nearly level area of Homen soils.

conservation tillage and conservation cropping systems, farming on the contour, stripcropping, establishing field windbreaks, and leaving crop residue on the surface conserve moisture.

Some of the limitations and hazards shown in the table cannot be easily overcome. These are flooding, depth to bedrock, and subsidence.

Additional limitations and hazards are as follows:

Excess lime.—This limitation can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Also, crops may respond well to additions of phosphate fertilizer to soils that have a high content of lime.

Depth to bedrock.—Rooting depth and available moisture may be limited by bedrock within a depth of 30 inches.

Flooding.—Winter small grain crops can be damaged. Tilling and planting should be delayed in the spring until flooding is no longer a hazard.

Gravelly.—This limitation in the surface layer caused rapid wear of tillage equipment. It cannot be easily overcome.

Subsidence.—Subsidence occurs as a result of shrinkage from drying, consolidation because of the loss of ground water, compaction from tillage, wind erosion, burning, and biochemical oxidation. Limiting the amount of drainage, avoiding excessive tillage and tillage when the soil is wet, and using a system of conservation tillage that leaves crop residue on the surface after planting help to control subsidence.

Wind erosion.—Using a system of conservation tillage that leaves crop residue on the surface after planting and keeping the surface rough help to control this hazard.

The criteria used to determine the limitations or hazards in the table are described in the following paragraphs.

Crusting.—The average content of organic matter in the surface layer is less than 2.5 percent, and the clay content is greater than 20 percent.

Depth to bedrock.—Bedrock is within a depth of 30 inches.

Excess lime.—The calcium carbonate equivalent is 15 percent or more, and the calcic horizon classification criteria are met.

Excessive permeability.—The upper limit of the permeability range is 6 inches or more within the soil profile.

Flooding.—The component of the map unit is occasionally flooded or frequently flooded.

Gravelly.—The content of gravel in the surface layer is greater than 15 percent.

Low available water capacity.—The weighted average of the available water capacity between the surface and a depth of 40 inches is 0.1 inch or less.

Ponding.—A water table is above the surface.

Poor tilth.—The component of the map unit has 27 percent or more clay in the surface layer.

Restricted permeability.—Permeability is less than 0.2 inch per hour between the surface and a depth of 40 inches.

Subsidence.—The decrease in surface elevation is more than 0 inches.

Water erosion.—The K factor of the surface layer multiplied by the slope is greater than 0.8, and the slope is 3 percent or more.

Wetness.—The component of the map unit has a water table within a depth of 1.5 feet.

Wind erosion.—The wind erodibility group (WEG) is 1 or 2.

Pastureland

Growing legumes, cool-season grasses, and warm-season grasses that are suited to the soils and climate of the area helps to maintain a productive stand of pasture.

Pastureland soils that are susceptible to water erosion meet the following criteria: The value of the K factor multiplied by the slope is greater than 0.8, and the slope is equal to or greater than 3 percent.

Water erosion reduces the productivity of pastureland. It also results in onsite and offsite sedimentation, causes water pollution by sedimentation, and increases the runoff of livestock manure and other added nutrients.

Measures that are effective in controlling water erosion include establishing or renovating stands of legumes and grasses. Controlling erosion during seedbed preparation is a major concern. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, establishing grassed waterways, farming on the contour, and using a system of conservation tillage that leaves a protective cover of crop residue on the surface can help to minimize erosion.

Overgrazing or grazing when the soil is wet reduces the extent of plant cover and results in surface compaction and poor tilth, and thus it increases the susceptibility to erosion. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition. The proper location of livestock watering facilities helps to minimize surface compaction or the formation of ruts by making it unnecessary for cattle to travel long distances up and down the steep slopes.

Soils that have low fertility meet the following

criteria: The average content of organic matter in the surface layer is less than 1 percent, and the cation-exchange capacity is equal to or less than 7 milliequivalents per 100 grams of soil.

Low fertility levels affect the health and vigor of the plants and thus have a direct impact on the quantity and quality of livestock produced. Additions of fertilizers and other organic material should be based on the results of soil tests, on the needs of specific plant species, and on the desired level of production.

Soils that have low pH, or low reaction, have a pH value equal to or less than 5.5 in the surface layer.

Low pH inhibits the uptake of certain nutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of plants. Applications of lime should be based on the results of soil tests. The goal is to achieve the optimum pH level for the uptake of the major nutrients by the specific grass, legume, or combination of grasses and legumes.

Available water capacity is low when it is a weighted average of less than 0.10 inch of water per inch of soil within a depth of 40 inches or when it is a weighted average of less than 3 inches in the root zone if the root zone is less than 40 inches thick. Available water capacity refers to the capacity of soils to hold water available for use by most plants. The quality and quantity of pasture may be reduced if the available water is inadequate for the maintenance of a healthy community of desired pasture species and thus the desired number of livestock. A poor quality pasture may increase the hazard of erosion and increase the runoff of pollutants. Planting drought-resistant species of grasses and legumes helps to establish a cover of vegetation. Irrigation may be needed.

In areas where slopes are 10 percent or more, the use of farm equipment may be restricted.

In areas where the soils have more than 15 percent gravel in the surface layer, seedbed preparation and renovation practices may be hindered. The cobbles and stones can be removed or piled in a corner of the field.

Crop Yield Estimates

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents (Fehrenbacher and others, 1978; Olson and Lang, 1994). Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage; erosion control; protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The relative productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Pasture yields.—Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or 5 goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields other than those shown in table 7.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for

field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not take into account major and generally expensive landshaping that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils generally are grouped at three levels—capability class, subclass, and unit (USDA, 1961). These categories indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, soybeans, small grain, and hay. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use.

If properly managed, soils in classes 1, 2, 3, and 4 are suitable for the mechanized production of commonly grown field crops and for pasture and forestland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class 1 to class 4. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes 5, 6, and 7 are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class 5 to class 7. The local office of the Cooperative Extension Service or the Natural Resources Conservation Service can provide guidance on the use of these soils as cropland.

Areas in class 8 are generally not suited for crops, pasture, or forestland without a level of management that is impractical. These areas may have potential for other uses, such as recreational facilities and wildlife habitat.

Capability subclasses identify the dominant kind of limitation in the class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

There are no subclasses in class 1 because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The capability classification of each map unit is given in table 7.

Prime Farmland

Prime farmland is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resource, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or forestland or for other purposes. They either are used for food and fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in national forests, national parks, military reservations, and state parks.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or alkalinity and the content of salts and sodium are

acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland where these limitations are overcome by drainage measures, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

About 102,258 acres in the survey area, or nearly 41 percent of the total acreage, meets the soil requirements for prime farmland. Areas of this land are throughout the county. The prime farmland is generally used for crops, mainly corn, soybeans, and wheat, which account for most of the local farm income.

The map units in the survey area that meet the criteria for prime farmland are listed in table 8. This list does not constitute a recommendation for a particular land use. On some soils included in the table, measures that overcome limitations are needed. The need for these measures is indicated in parentheses after the map unit name. The location of each map unit is shown on the detailed soil maps. The soil qualities that affect use and management are described in the section "Soil Series and Detailed Soil Map Units".

Erosion Factors

Soil erodibility (K) and soil-loss tolerance (T) factors are used in an equation that predicts the amount of soil lost through water erosion in areas of cropland. The procedure for predicting soil loss is useful in guiding the selection of soil and water conservation practices. The erosion factors for the soils in the survey area are listed in table 20.

Soil Erodibility (Kw) Factor

The soil erodibility (Kw) factor indicates the susceptibility of a soil to sheet and rill erosion by water. The soil properties that influence erodibility are those that affect the infiltration rate, the movement of water through the soil, and the water storage capacity of the soil and those that allow the soil to resist dispersion, splashing, abrasion, and the transporting forces of rainfall and runoff. The most important soil properties are the content of silt plus very fine sand, the content of sand coarser than very fine sand, the content of organic matter, soil structure, and permeability.

Fragment-Free Soil Erodibility (Kf) Factor

This is one of the factors used in the Revised Universal Soil Loss Equation (RUSLE). It shows the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Soil-Loss Tolerance (T) Factor

The soil-loss tolerance (T) factor is an estimate of the maximum annual rate of soil erosion that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons of soil loss per acre per year. Ratings of 1 to 5 are used, depending on soil properties and prior erosion. The criteria used in assigning a T factor to a soil include maintenance of an adequate rooting depth for crop production, potential reduction of crop yields, maintenance of water-control structures affected by sedimentation, prevention of gullying, and the value of nutrients lost through erosion.

Wind Erodibility Groups

Wind erodibility is directly related to the percentage of dry, nonerodible surface soil aggregates larger than 0.84 millimeter in diameter. From this percentage, the wind erodibility index (I) factor is determined. This factor is an expression of the stability of the soil aggregates, or the extent to which they are broken down by tillage and the abrasion caused by windblown soil particles. Soils are assigned to wind erodibility groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 millimeter. The wind erodibility groups and wind erodibility index numbers are listed in table 20.

Additional information about wind erodibility groups and K, Kf, T, and I factors can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Forestland Management and Productivity

Monroe County was originally mostly forestland. The land survey of the early 1800s estimated that Monroe County was 87 percent forestland and had only three or four small prairies in the eastern part (Bundey and Klein, 1967). The steep uplands were dominated by oak and hickory; the nearly level uplands supported elm, black walnut, hackberry, wild

cherry, and honeylocust; and the flood plains supported cottonwood, sycamore, black walnut, white walnut, ash, elm, pecan, soft maple, and persimmon (Bundey and Klein, 1967). Settlers cleared some of the forests for farms, homesteads, and fuel. An increase in population and new farming technology during the latter part of the 19th century resulted in a large decline in the acreage of forestland. The demand for agricultural production during the 20th century and urban expansion have accelerated this decline. Much of the remaining forestland is in areas that are too steep or too wet for cultivation. The soils in these areas have fair to good potential for trees of high quality if the forestland is properly managed.

About 25,000 to 27,000 acres in the county, or 10 to 11 percent of the total acreage, is forestland. Most of these areas are privately owned. The largest areas of forestland are in the deeply dissected uplands near the bluff (fig. 9). The main species are white oak, northern red oak, and shagbark hickory on uplands and eastern cottonwood and American sycamore on flood plains.

Many of the stands can be improved by measures that thin out mature trees and remove undesirable species. Measures that exclude livestock, prevent fires, and control disease and insects also are needed.

Assistance in establishing, improving, or managing forestland is available from foresters or natural resource specialists.

Table 9 provides information regarding the

Figure 9.—The steep forested side slope is in an area of Sonsac soils. The pasture is an area of Wakeland soils on a small flood plain.

productivity of the soils in the county for forestland. The *potential productivity* for merchantable or *common trees* on a soil is expressed as a *site index* and as a *volume* number. Only those soils suitable for wood crops are listed.

The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands.

In most cases, the first species listed under *common trees* for a soil is the indicator species for that soil. It generally is the most common species on the soil. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected based on growth rate, quality, value, and marketability.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important trees. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

In tables 10a, 10b, and 10c, interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forest management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 11 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in table 11 are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

Recreation

The demand for land and facilities for boating, swimming, picnicking, fishing, hunting, hiking, camping, and other forms of outdoor recreation is increasing throughout Monroe County. Facilities for these activities are available on a few privately owned tracts.

The potential for further recreational development is favorable throughout the county. The soils having the best potential are along the Kaskaskia and Mississippi Rivers. The large areas of karst topography and the large areas of steep slopes along the bluffs provide a natural setting for the establishment of paths and trails, camp areas, and picnic areas.

The soils of the survey area are rated in table 12 according to limitations that affect their suitability for recreation. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of

the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in the table can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

In general, most of the land in Monroe County is not managed primarily for wildlife habitat. Good land management practices, however, can improve the value of many areas for wildlife. Farm practices that leave crop residue on the fields during fall and winter not only help to control erosion but also provide winter cover and food for some species of wildlife. Allowing grassed waterways, road ditches, fencelines, set-aside fields, and vacant properties to remain unmowed until

early August can provide much-needed habitat for ground-nesting wildlife, such as rabbits, pheasants, and many species of songbirds.

Many temporarily and seasonally flooded wetlands have been impacted by land use practices. Development and cultivation in these wetlands should be avoided. Buffer strips surrounding wetland areas provide food and nesting cover for many wildlife species and prevent these areas from filling in with eroded sediment. Wetlands, streambanks, and woodlots should be fenced so that wildlife are excluded. Fencing protects and maintains the native plant communities that support wildlife species, helps to control erosion, and improves water quality.

When an area is being restored or managed for wildlife habitat, an understanding of the soils on the site is important. Poorly drained or very poorly drained soils, for example, have a seasonal high water table and are likely to support vegetation tolerant of wet conditions. This kind of vegetation attracts wetland wildlife species. In some areas, poorly drained and very poorly drained soils have been drained by subsurface tile drains or drainage ditches. Such areas offer opportunities for the restoration of wetland habitat, as long as negative impacts on neighboring properties can be avoided.

Upland soils support plant communities that were once dominated by prairie grasses and oak savannah habitats. These habitats can be restored by applying management practices that promote or reestablish the native plant species and control or eliminate competing exotic vegetation.

Assistance with wildlife habitat projects is available from various local, State, and Federal agencies, including the Illinois Department of Conservation, the U.S. Fish and Wildlife Service, the Natural Resources Conservation Service, and the local Soil and Water Conservation District.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 13, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are wheat, rye, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, indiangrass, blueberry, goldenrod, lambsquarter, dandelions, blackberry, beggarweed, wheatgrass, and nightshade.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, boxelder,

birch, maple, green ash, willow, and hickory. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are hawthorn, honeysuckle, American plum, redosier dogwood, chokecherry, serviceberry, silver buffaloberry, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, hemlock, fir, yew, cedar, larch, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are muskrat marshes, waterfowl feeding areas, beaver ponds, and other ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, killdeer, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, owls, thrushes, woodpeckers, tree squirrels, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 1998) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions

observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1998).

31A Pierron silt loam, 0 to 2 percent slopes
50A Virden silt loam, 0 to 2 percent slopes
109A Racoon silt loam, 0 to 2 percent slopes
657A Burksville silt loam, 0 to 2 percent slopes
993A Cowden-Piasa silt loams, 0 to 2 percent slopes
1071A Darwin silty clay, undrained, 0 to 2 percent slopes, occasionally flooded
1457A Booker clay, undrained, 0 to 2 percent slopes, occasionally flooded
1591A Fults silty clay, undrained, 0 to 2 percent slopes, occasionally flooded
3288L Petrolia silty clay loam, 0 to 2 percent slopes, frequently flooded, long duration
3333L Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, long duration
3334L Birds silt loam, 0 to 2 percent slopes, frequently flooded, long duration
3646A Fluvaquents, loamy, 0 to 2 percent slopes, frequently flooded
8070A Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded
8071L Darwin silty clay, 0 to 2 percent slopes, occasionally flooded, long duration
8084A Okaw silt loam, 0 to 2 percent slopes, occasionally flooded
8302A Ambraw silty clay loam, 0 to 2 percent slopes, occasionally flooded
8457L Booker clay, 0 to 2 percent slopes, occasionally flooded, long duration
8591A Fults silty clay, 0 to 2 percent slopes, occasionally flooded

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

Table 14 lists the hydric characteristics of the soils in Monroe County. It identifies hydric soils and also nonhydric soils that may have hydric inclusions. This list can help in planning land uses on a specific site; however, onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils (National Research Council, 1995; Hurt and others, 1998).

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways,

pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites (fig. 10), including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 15a and 15b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to

Figure 10.—Gully erosion in an area of Stookey soils near the New Valmeyer site. Erosion is a potential problem affecting the construction of homes.

bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and

sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 16 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and

when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Table 17 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 17, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Gravel is defined as particles ranging in size from about 0.2 inch to 3 inches in diameter. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Water Management

Tables 18a and 18b give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; constructing grassed waterways and surface drains; constructing terraces and diversions; and tile drains and underground outlets. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land

against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Grassed waterways and surface drains are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways and surface drains. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Tile drains and underground outlets are used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to the soil in its undisturbed condition and do not include consideration of current land use. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade and stability of tile drains.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

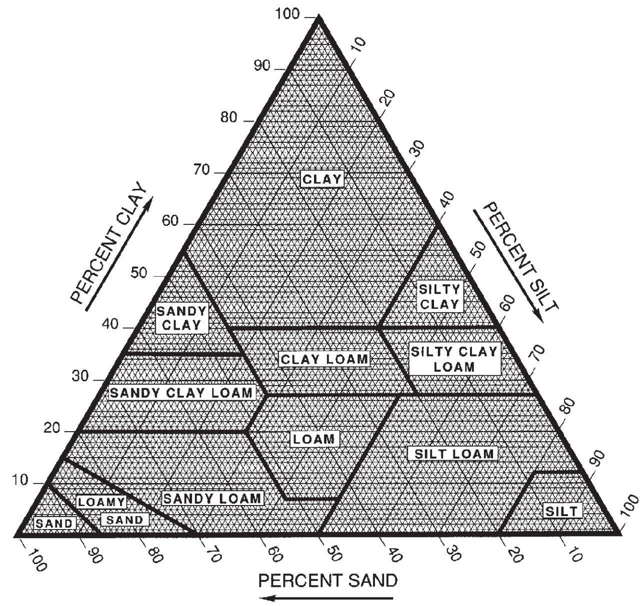

Figure 11.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

Engineering Index Properties

Table 19 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 11). “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and

plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 20 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In table 20, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In table 20, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 20, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when

the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 20, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 20 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.

8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil

moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 21 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Water Features

Table 22 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 22 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Also shown in table 22 is the kind of water table—that is, apparent or perched. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water

standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 22 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 23 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or

concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clayey soil. Silty clay, sandy clay, or clay.

Closed depression. A low area completely surrounded by higher ground and having no natural outlet.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth

is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Glacial drift (geology). Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash (geology). Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till (geology). Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciated uplands. Land areas that were previously covered by continental or alpine glaciers and that are at a higher elevation than the flood plain.

Glaciofluvial deposits (geology). Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits (geology). Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water (geology). Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum,

an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Typical methods of irrigation used in the survey area are:

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit (geology). Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy soil. Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

MLRA (Major Land Resource Area). A geographic area characterized by a particular pattern of land uses, elevation and topography, soils, climate, water resources, and potential natural vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that

mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly

continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of bare bedrock other than lava flows and rocklined pits.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandy soil. Sand or loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slackwater. A still body of water in a stream.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 5 percent
Moderately sloping	5 to 10 percent
Strongly sloping	10 to 18 percent
Steep	18 to 35 percent
Very steep	35 to 70 percent

Classes for complex slopes are as follows:

Undulating	1 to 8 percent
Rolling	4 to 16 percent

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Understory. Any plants in a forest community that grow to a height of less than 5 feet.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Waterloo, Illinois)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	^oF	^oF	^oF	^oF	^oF	Units	In	In	In		In
January----	39.0	20.6	29.8	70	-10	7	2.02	0.69	3.12	4	4.7
February---	43.8	24.6	34.2	75	-3	13	2.38	1.17	3.44	4	3.9
March------	55.9	35.0	45.4	83	11	83	3.69	2.25	4.98	6	2.6
April------	68.0	45.3	56.6	90	25	245	3.57	2.02	4.94	7	.6
May--------	76.8	54.4	65.6	91	35	485	4.11	2.39	5.64	7	.0
June-------	85.4	63.2	74.3	97	46	729	3.78	2.13	5.24	6	.0
July-------	89.4	67.2	78.3	101	52	874	3.99	2.26	5.52	5	.0
August-----	87.5	65.1	76.3	101	50	814	3.02	1.72	4.18	4	.0
September--	80.9	58.1	69.5	97	38	585	3.60	1.13	5.62	5	.0
October----	69.6	46.6	58.1	89	26	283	2.95	1.43	4.27	5	.0
November---	55.8	36.7	46.3	80	13	82	3.74	1.40	5.70	6	1.1
December---	42.8	25.7	34.2	71	-3	14	3.32	1.44	4.91	5	3.3
Yearly:											
Average---	66.2	45.2	55.7	---	---	---	---	---	---	---	---
Extreme---	107	-16	---	103	-11	---	---	---	---	---	---
Total-----	---	---	---	---	---	4,213	40.17	33.42	46.16	64	16.1

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Waterloo, Illinois)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 4	Apr. 13	Apr. 27
2 years in 10 later than--	Mar. 30	Apr. 9	Apr. 22
5 years in 10 later than--	Mar. 22	Apr. 1	Apr. 12
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 1	Oct. 18	Oct. 5
2 years in 10 earlier than--	Nov. 7	Oct. 23	Oct. 10
5 years in 10 earlier than--	Nov. 16	Nov. 3	Oct. 19

Table 3.--Growing Season

(Recorded in the period 1961-90 at Waterloo, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	218	195	169
8 years in 10	225	202	176
5 years in 10	238	215	189
2 years in 10	251	228	203
1 year in 10	258	234	210

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Ambraw	Fine-loamy, mixed, superactive, mesic Fluvaquentic Endoaquolls
Arenzville	Coarse-silty, mixed, superactive, nonacid, mesic Typic Udifluvents
Atlas	Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs
Aviston	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Banlic	Coarse-silty, mixed, active, acid, mesic Fragic Epiaquepts
Beaucoup	Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
Bethalto	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Birds	Fine-silty, mixed, superactive, nonacid, mesic Typic Fluvaquents
Blake	Fine-silty, mixed, superactive, calcareous, mesic Aquic Udifluvents
*Booker	Very fine, smectitic, mesic Vertic Endoaquolls
Bunkum	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
Burksville	Fine-silty, mixed, superactive, mesic Typic Epiaqualfs
Caseyville	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Colp	Fine, smectitic, mesic Aquertic Chromic Hapludalfs
Coulterville	Fine-silty, mixed, superactive, mesic Aeric Epiaqualfs
Cowden	Fine, smectitic, mesic Mollic Albaqualfs
Darmstadt	Fine-silty, mixed, superactive, mesic Albic Natraqualfs
Darwin	Fine, smectitic, mesic Fluvaquentic Vertic Endoaquolls
Drury	Fine-silty, mixed, superactive, mesic Dystric Eutrudepts
Dupo	Coarse-silty over clayey, mixed over smectitic, superactive, nonacid, mesic Aquic Udifluvents
Fluvaquents	Loamy, mixed, superactive, nonacid, mesic Fluvaquents
Fults	Fine, smectitic, mesic Vertic Endoaquolls
Grantfork	Fine-loamy, mixed, superactive, mesic Aeric Epiaqualfs
Hamburg	Coarse-silty, mixed, superactive, calcareous, mesic Typic Udorthents
Haynie	Coarse-silty, mixed, superactive, calcareous, mesic Mollic Udifluvents
Herrick	Fine, smectitic, mesic Aquic Argiudolls
Hickory	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Homen	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Hurst	Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs
Lacrescent	Loamy-skeletal, mixed, superactive, mesic Typic Hapludolls
Landes	Coarse-loamy, mixed, superactive, mesic Fluventic Hapludolls
Marine	Fine, smectitic, mesic Aeric Albaqualfs
Meadowbank	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Menfro	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Millstadt	Fine-silty, mixed, superactive, mesic Aeric Epiaqualfs
Nameoki	Fine, smectitic, mesic Aquertic Hapludolls
Neotoma	Loamy-skeletal, mixed, active, mesic Ultic Hapludalfs
Oconee	Fine, smectitic, mesic Udollic Endoaqualfs
Okaw	Fine, smectitic, mesic Chromic Vertic Albaqualfs
Orthents (801D)	Fine-silty, mixed, active, nonacid, mesic Aquic Udorthents
Orthents (802D, 3847L)	Fine-loamy, mixed, active, nonacid, mesic Typic Udorthents
Petrolia	Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts
Piasa	Fine, smectitic, mesic Mollic Natraqualfs
Pierron	Fine, smectitic, mesic Typic Albaqualfs
Racoon	Fine-silty, mixed, superactive, mesic Typic Endoaqualfs
Raddle	Fine-silty, mixed, superactive, mesic Typic Hapludolls
Redbud	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Rocher	Coarse-loamy, mixed, superactive, calcareous, mesic Typic Udifluvents
Ruma	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Sarpy	Mixed, mesic Typic Udipsamments
Shaffton	Fine-loamy, mixed, superactive, mesic Fluvaquentic Hapludolls
Sonsac	Clayey-skeletal, mixed, active, mesic Typic Hapludalfs
Stookey	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Tice	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Typic Hapludalfs	Typic Hapludalfs

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Ursa	Fine, smectitic, mesic Chromic Vertic Hapludalfs
Virden	Fine, smectitic, mesic Vertic Argiaquolls
Wakeland	Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents
Westmore	Fine-silty, mixed, active, mesic Typic Hapludalfs
Wilbur	Coarse-silty, mixed, superactive, mesic Fluvaquentic Eutrudepts
Winfield	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Wirt	Coarse-loamy, mixed, superactive, mesic Dystric Fluventic Eutrudepts

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
7D3	Atlas silty clay loam, 10 to 18 percent slopes, severely eroded	4,823	1.9
8F2	Hickory silt loam, 18 to 35 percent slopes, eroded	6,991	2.7
30F	Hamburg silt loam, 18 to 35 percent slopes	288	0.1
31A	Pierron silt loam, 0 to 2 percent slopes	1,564	0.6
46A	Herrick silt loam, 0 to 2 percent slopes	38	*
50A	Virden silt loam, 0 to 2 percent slopes	212	*
75B	Drury silt loam, 2 to 5 percent slopes	432	0.2
75C	Drury silt loam, 5 to 10 percent slopes	290	0.1
75D	Drury silt loam, 10 to 18 percent slopes	198	*
75F	Drury silt loam, 18 to 35 percent slopes	269	0.1
79B	Menfro silt loam, 2 to 5 percent slopes	5,048	2.0
79C2	Menfro silt loam, 5 to 10 percent slopes, eroded	4,521	1.8
79D3	Menfro silty clay loam, 10 to 18 percent slopes, severely eroded	2,808	1.1
79F	Menfro silt loam, 18 to 35 percent slopes	3,361	1.3
79F3	Menfro silty clay loam, 18 to 35 percent slopes, severely eroded	2,815	1.1
90A	Bethalto silt loam, 0 to 2 percent slopes	1	*
109A	Racoon silt loam, 0 to 2 percent slopes	1	*
123	Riverwash	804	0.3
216G	Stookey silt loam, 35 to 70 percent slopes	8,060	3.2
267A	Caseyville silt loam, 0 to 2 percent slopes	348	0.1
267B	Caseyville silt loam, 2 to 5 percent slopes	2,170	0.9
423A	Millstadt silt loam, 0 to 2 percent slopes	360	0.1
437B	Redbud silt loam, 2 to 5 percent slopes	309	0.1
438B	Aviston silt loam, 2 to 5 percent slopes	14	*
438C2	Aviston silt loam, 5 to 10 percent slopes, eroded	1	*
477B	Winfield silt loam, 2 to 5 percent slopes	4,124	1.6
477C2	Winfield silt loam, 5 to 10 percent slopes, eroded	2,113	0.8
491B	Ruma silt loam, 2 to 5 percent slopes	2,480	1.0
491C2	Ruma silt loam, 5 to 10 percent slopes, eroded	1,325	0.5
491D3	Ruma silty clay loam, 10 to 18 percent slopes, severely eroded	1,043	0.4
515C3	Bunkum silty clay loam, 5 to 10 percent slopes, severely eroded	12,864	5.1
515D3	Bunkum silty clay loam, 10 to 18 percent slopes, severely eroded	11,317	4.4
517A	Marine silt loam, 0 to 2 percent slopes	2,954	1.2
517B	Marine silt loam, 2 to 5 percent slopes	9,204	3.6
582B	Homen silt loam, 2 to 5 percent slopes	12,366	4.9
582B2	Homen silt loam, 2 to 5 percent slopes, eroded	171	*
582C2	Homen silt loam, 5 to 10 percent slopes, eroded	5,036	2.0
657A	Burksville silt loam, 0 to 2 percent slopes	1,183	0.5
658F	Sonsac flaggy silt loam, 18 to 35 percent slopes	4,582	1.8
785G	Lacrescent flaggy silt loam, 35 to 70 percent slopes	644	0.3
801D	Orthents, silty, steep	343	0.1
802D	Orthents, loamy, steep	274	0.1
864	Pits, quarries	161	*
878C3	Coulterville-Grantfork silty clay loams, 5 to 10 percent slopes, severely eroded	44	*
880B2	Coulterville-Darmstadt silt loams, 2 to 5 percent slopes, eroded	42	*
882A	Oconee-Darmstadt-Coulterville silt loams, 0 to 2 percent slopes	75	*
882B	Oconee-Coulterville-Darmstadt silt loams, 2 to 5 percent slopes	16	*
884B2	Bunkum-Coulterville silt loams, 2 to 5 percent slopes, eroded	1,286	0.5
884C3	Bunkum-Coulterville silty clay loams, 5 to 10 percent slopes, severely eroded	1,282	0.5
886F	Ruma-Ursa silt loams, 18 to 35 percent slopes	1,655	0.7
886F3	Ruma-Ursa silty clay loams, 18 to 35 percent slopes, severely eroded	88	*
897D3	Bunkum-Atlas silty clay loams, 10 to 18 percent slopes, severely eroded	2,457	1.0
907D3	Redbud-Colp silty clay loams, 10 to 18 percent slopes, severely eroded	780	0.3
988F	Westmore-Neotoma complex, 18 to 35 percent slopes	2,336	0.9
993A	Cowden-Piasa silt loams, 0 to 2 percent slopes	12	*
1071A	Darwin silty clay, undrained, 0 to 2 percent slopes, occasionally flooded	21	*
1457A	Booker clay, undrained, 0 to 2 percent slopes, occasionally flooded	2,434	1.0
1591A	Fults silty clay, undrained, 0 to 2 percent slopes, occasionally flooded	1,639	0.6
3092B	Sarpy fine sand, 2 to 5 percent slopes, frequently flooded	476	0.2
3226A	Wirt silt loam, 0 to 2 percent slopes, frequently flooded	319	0.1
3288L	Petrolia silty clay loam, 0 to 2 percent slopes, frequently flooded, long duration	157	*
3333A	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded	7,320	2.9

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
3333L	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, long duration	2,538	1.0
3334L	Birds silt loam, 0 to 2 percent slopes, frequently flooded, long duration	2,501	1.0
3336A	Wilbur silt loam, 0 to 2 percent slopes, frequently flooded	1,764	0.7
3391A	Blake silty clay loam, 0 to 2 percent slopes, frequently flooded	4,045	1.6
3394B	Haynie silt loam, 2 to 5 percent slopes, frequently flooded	3,927	1.5
3646A	Fluvaquents, loamy, 0 to 2 percent slopes, frequently flooded	1,583	0.6
3847L	Fluvaquents-Orthents complex, frequently flooded, long duration	2,957	1.2
5079B	Menfro silt loam, karst, 2 to 5 percent slopes, eroded	3,497	1.4
5079C	Menfro silt loam, karst, 5 to 12 percent slopes, severely eroded	5,525	2.2
5079D	Menfro silt loam, karst, 12 to 25 percent slopes, severely eroded	8,551	3.4
5079G	Menfro silt loam, karst, 25 to 60 percent slopes	8,992	3.5
5491C	Ruma silty clay loam, karst, 5 to 12 percent slopes, severely eroded	1,335	0.5
5491D	Ruma silty clay loam, karst, 12 to 25 percent slopes, severely eroded	1,534	0.6
5491G	Ruma silt loam, karst, 25 to 60 percent slopes	1,509	0.6
5582B	Homen silt loam, karst, 2 to 5 percent slopes	688	0.3
5582C	Homen silt loam, karst, 5 to 12 percent slopes, eroded	328	0.1
7430A	Raddle silt loam, 0 to 2 percent slopes, rarely flooded	384	0.2
8038B	Rocher loam, 2 to 5 percent slopes, occasionally flooded	1,092	0.4
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded	606	0.2
8071L	Darwin silty clay, 0 to 2 percent slopes, occasionally flooded, long duration	29	*
8078A	Arenzville silt loam, 0 to 2 percent slopes, occasionally flooded	293	0.1
8084A	Okaw silt loam, 0 to 2 percent slopes, occasionally flooded	259	0.1
8122B	Colp silt loam, 2 to 5 percent slopes, occasionally flooded	124	*
8122C	Colp silty clay loam, 5 to 10 percent slopes, severely eroded, occasionally flooded	201	*
8180A	Dupo silt loam, 0 to 2 percent slopes, occasionally flooded	1,995	0.8
8183A	Shaffton clay loam, 0 to 2 percent slopes, occasionally flooded	7,897	3.1
8284A	Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded	705	0.3
8302A	Ambraw silty clay loam, 0 to 2 percent slopes, occasionally flooded	8,874	3.5
8304B	Landes very fine sandy loam, 2 to 5 percent slopes, occasionally flooded	8,149	3.2
8333A	Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded	1,337	0.5
8336A	Wilbur silt loam, 0 to 2 percent slopes, occasionally flooded	1,038	0.4
8338B	Hurst silt loam, 2 to 5 percent slopes, occasionally flooded	317	0.1
8394B	Haynie silt loam, 2 to 5 percent slopes, occasionally flooded	1,941	0.8
8436B	Meadowbank silt loam, 2 to 5 percent slopes, occasionally flooded	91	*
8457L	Booker clay, 0 to 2 percent slopes, occasionally flooded, long duration	5,596	2.2
8591A	Fults silty clay, 0 to 2 percent slopes, occasionally flooded	11,978	4.7
8592A	Nameoki silty clay, 0 to 2 percent slopes, occasionally flooded	1,631	0.6
8787A	Banlic silt loam, 0 to 2 percent slopes, occasionally flooded	951	0.4
8812F	Typic Hapludalfs, 18 to 35 percent slopes, occasionally flooded	157	*
W	Water	7,087	2.8
	Total	254,355	100.0

* Less than 0.1 percent.

Table 6.--Limitations Affecting Cropland and Pastureland

(See text for a description of the limitations and hazards listed in this table. Miscellaneous areas and map units that are generally not available for production of crops or pasture are not listed. Absence of an entry indicates that the map unit is generally not suited to use as cropland or pastureland)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
7D3:		
Atlas	Wetness, poor tilth, water erosion, restricted permeability	Wetness, poor tilth, low pH, water erosion, low fertility
8F2:		
Hickory	---	Equipment limitation, low pH, water erosion
31A:		
Pierron	Ponding, low pH, crusting, restricted permeability	Ponding, low pH, frost heave
46A:		
Herrick	Wetness, restricted permeability	Wetness, low pH
50A:		
Virden	Ponding, restricted permeability	Ponding, frost heave
75B:		
Drury	Crusting, water erosion	Water erosion
75C:		
Drury	Crusting, water erosion	Water erosion
75D:		
Drury	Crusting, water erosion	Water erosion
75F:		
Drury	___	Equipment limitation, water erosion
79B:		
Menfro	Crusting, water erosion	Low pH, water erosion
79C2:		
Menfro	Crusting, water erosion	Low pH, water erosion
79D3:		
Menfro	Poor tilth, crusting, water erosion	Poor tilth, low pH, water erosion, low fertility
79F:		
Menfro	___	Equipment limitation, low pH, water erosion
90A:		
Bethalto	Wetness	Wetness, low pH
109A:		
Racoon	Ponding, crusting, restricted permeability	Ponding, low pH, frost heave

Table 6.--Limitations Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
123:		
Riverwash	Low pH, limited available water capacity, restricted permeability	Low pH, limited available water capacity, low fertility
267A:		
Caseyville	Wetness, crusting	Wetness, low pH
267B:		
Caseyville	Wetness, crusting, water erosion	Wetness, low pH, water erosion
423A:		
Millstadt	Wetness, low pH, crusting, restricted permeability	Wetness, low pH
437B:		
Redbud	Crusting, water erosion, restricted permeability	Low pH, water erosion
438B:		
Aviston	Water erosion	Low pH, water erosion
438C2:		
Aviston	Water erosion	Low pH, water erosion
477B:		
Winfield	Crusting, water erosion	Low pH, water erosion
477C2:		
Winfield	Crusting, water erosion	Low pH, water erosion
491B:		
Ruma	Crusting, water erosion	Low pH, water erosion
491C2:		
Ruma	Crusting, water erosion	Low pH, water erosion
491D3:		
Ruma	Poor tilth, crusting, water erosion	Poor tilth, low pH, water erosion, low fertility
515C3:		
Bunkum	Wetness, poor tilth, crusting, water erosion, restricted permeability	Wetness, poor tilth, low pH, water erosion, low fertility
515D3:		
Bunkum	Wetness, poor tilth, crusting, water erosion, restricted permeability	Wetness, poor tilth, low pH, water erosion, low fertility
517A:		
Marine	Wetness, restricted permeability	Wetness, low pH
517B:		
Marine	Wetness, water erosion, restricted permeability	Wetness, low pH, water erosion
582B:		
Homen	Crusting, water erosion, restricted permeability	Low pH, water erosion

Table 6.--Limitations Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
582B2:		
Homen	Crusting, water erosion, restricted permeability	Low pH, water erosion
582C2:		
Homen	Crusting, water erosion, restricted permeability	Low pH, water erosion
657A:		
Burksville	Ponding, high pH, crusting, excess sodium, restricted permeability	Ponding, high pH, excess sodium, frost heave
658F:		
Sonsac	___	Equipment limitation, surface rock fragments, depth to bedrock, low pH, high pH, water erosion
801D:		
Orthents, silty	Wetness, crusting, water erosion	Wetness, low pH, water erosion, low fertility
802D:		
Orthents, loamy	Crusting, water erosion	Water erosion, low fertility
878C3:		
Coulterville	Wetness, poor tilth, high pH, crusting, water erosion, excess sodium, restricted permeability	Wetness, poor tilth, low pH, high pH, water erosion, excess sodium, low fertility
Grantfork	Wetness, poor tilth, high pH, crusting, water erosion, excess sodium, restricted permeability	Wetness, poor tilth, low pH, high pH, water erosion, excess sodium, low fertility
880B2:		
Coulterville	Wetness, high pH, crusting, water erosion, excess sodium, restricted permeability	Wetness, low pH, high pH, water erosion, excess sodium
Darmstadt	Wetness, high pH, excess lime, crusting, water erosion, excess sodium, restricted permeability	Wetness, low pH, high pH, water erosion, excess sodium, excess lime
882A:		
Oconee	Wetness, crusting, restricted permeability	Wetness, low pH
Darmstadt	Wetness, high pH, excess lime, crusting, excess sodium, restricted permeability	Wetness, low pH, high pH, excess sodium, excess lime
Coulterville	Wetness, high pH, crusting, excess sodium, restricted permeability	Wetness, low pH, high pH, excess sodium

Table 6.--Limitations Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
882B:		
Oconee	Wetness, crusting, water erosion, restricted permeability	Wetness, low pH, water erosion
Coulterville	Wetness, high pH, crusting, water erosion, excess sodium, restricted permeability	Wetness, low pH, high pH, water erosion, excess sodium
Darmstadt	Wetness, high pH, excess lime, crusting, water erosion, excess sodium, restricted permeability	Wetness, low pH, high pH, water erosion, excess sodium, excess lime
884B2:		
Bunkum	Wetness, crusting, water erosion, restricted permeability	Wetness, low pH, water erosion
Coulterville	Wetness, high pH, crusting, water erosion, excess sodium, restricted permeability	Wetness, low pH, high pH, water erosion, excess sodium
884C3:		
Bunkum	Wetness, poor tilth, crusting, water erosion, restricted permeability	Wetness, poor tilth, low pH, water erosion, low fertility
Coulterville	Wetness, poor tilth, high pH, crusting, water erosion, excess sodium, restricted permeability	Wetness, poor tilth, low pH, high pH, water erosion, excess sodium, low fertility
886F:		
Ruma	___	Equipment limitation, low pH, water erosion
Ursa	___	Equipment limitation, low pH, water erosion
897D3:		
Bunkum	___	Wetness, poor tilth, low pH, water erosion, low fertility
Atlas	___	Wetness, poor tilth, low pH, water erosion, low fertility
907D3:		
Redbud	Poor tilth, crusting, water erosion, restricted permeability	Poor tilth, low pH, water erosion, low fertility
Colp	Wetness, poor tilth, crusting, water erosion, restricted permeability	Wetness, poor tilth, low pH, water erosion, low fertility
993A:		
Cowden	Ponding, crusting, restricted permeability	Ponding, low pH, frost heave
Piasa	Ponding, high pH, excess sodium, restricted permeability	Ponding, high pH, excess sodium, frost heave

Table 6.--Limitations Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
1071A:		
Darwin, undrained	___	Flooding, ponding, frost heave
1457A:		
Booker, undrained	___	Flooding, ponding, frost heave
1591A:		
Fults, undrained	___	Flooding, ponding, frost heave
3092B:		
Sarpy	Flooding, high pH, excess lime, wind erosion, limited available water capacity, excessive permeability	Flooding, high pH, wind erosion, limited available water capacity, low fertility, excess lime, excessive permeability
3226A:		
Wirt	Flooding	Flooding
3288L:		
Petrolia	Flooding, ponding, poor tilth, crusting, restricted permeability	Flooding, ponding, poor tilth, frost heave
3333A:		
Wakeland	Flooding, wetness	Flooding, wetness
3333L:		
Wakeland	Flooding, wetness	Flooding, wetness
3334L:		
Birds	Flooding, ponding, crusting, restricted permeability	Flooding, ponding, frost heave
3336A:		
Wilbur	Flooding, wetness	Flooding, wetness
3391A:		
Blake	Flooding, wetness, poor tilth, high pH, excess lime	Flooding, wetness, poor tilth, high pH, excess lime
3394B:		
Haynie	Flooding, high pH, excess lime, crusting, water erosion	Flooding, high pH, water erosion, excess lime
3646A:		
Fluvaquents, loamy	Flooding, ponding, crusting	Flooding, ponding, frost heave
3847L:		
Fluvaquents	Flooding, ponding, crusting	Flooding, ponding, frost heave
Orthents	Crusting, water erosion	Water erosion
5079B:		
Menfro, karst	Crusting, water erosion	Low pH, water erosion

Table 6.--Limitations Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
5079C:		
Menfro, karst	Crusting, water erosion	Low pH, water erosion, low fertility
5079D:		
Menfro, karst	Crusting, water erosion	Equipment limitation, low pH, water erosion, low fertility
5491C:		
Ruma, karst	Poor tilth, crusting, water erosion	Poor tilth, low pH, water erosion, low fertility
5491D:		
Ruma, karst	Poor tilth, crusting, water erosion	Equipment limitation, poor tilth, low pH, water erosion, low fertility
5582B:		
Homen, karst	Crusting, water erosion, restricted permeability	Low pH, water erosion
5582C:		
Homen, karst	Crusting, water erosion, restricted permeability	Low pH, water erosion
7430A:		
Raddle	Few limitations (well suited)	Few limitations (well suited)
8038B:		
Rocher	Flooding, high pH, excess lime, water erosion	Flooding, high pH, water erosion, low fertility, excess lime
8070A:		
Beaucoup	Flooding, ponding	Flooding, ponding, frost heave
8071L:		
Darwin	Flooding, ponding, poor tilth, restricted permeability	Flooding, ponding, frost heave
8078A:		
Arenzville	Flooding	Flooding
8084A:		
Okaw	Flooding, ponding, low pH, crusting, restricted permeability	Flooding, ponding, low pH, frost heave
8122B:		
Colp	Flooding, wetness, crusting, water erosion, restricted permeability	Flooding, wetness, low pH, water erosion
8122C:		
Colp	Flooding, wetness, poor tilth, crusting, water erosion, restricted permeability	Flooding, wetness, poor tilth, low pH, water erosion, low fertility
8180A:		
Dupo	Flooding, wetness, restricted permeability	Flooding, wetness

Table 6.--Limitations Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
8183A:		
Shaffton	Flooding, wetness, poor tilth, excessive permeability	Flooding, wetness, poor tilth, low pH, excessive permeability
8284A:		
Tice	Flooding, wetness, poor tilth	Flooding, wetness, poor tilth, low pH
8302A:		
Ambraw	Flooding, ponding, poor tilth, high pH, restricted permeability	Flooding, ponding, low pH, high pH, frost heave
8304B:		
Landes	Flooding, very high pH, water erosion, excessive permeability	Flooding, very high pH, excessive permeability
8333A:		
Wakeland	Flooding, wetness	Flooding, wetness
8336A:		
Wilbur	Flooding, wetness	Flooding, wetness
8338B:		
Hurst	Flooding, wetness, low pH, crusting, water erosion, restricted permeability	Flooding, wetness, low pH, water erosion
8394B:		
Haynie	Flooding, high pH, excess lime, crusting, water erosion	Flooding, high pH, water erosion, excess lime
8436B:		
Meadowbank	Flooding, water erosion, excessive permeability	Flooding, low pH, water erosion, excessive permeability
8457L:		
Booker	Flooding, ponding, poor tilth, poor tilth, restricted permeability	Flooding, ponding, poor tilth, frost heave
8591A:		
Fults	Flooding, ponding, poor tilth, poor tilth, restricted permeability	Flooding, ponding, frost heave
8592A:		
Nameoki	Flooding, wetness, poor tilth, poor tilth, restricted permeability	Flooding, wetness
8787A:		
Banlic	Flooding, wetness, restricted permeability	Flooding, wetness, low pH

Table 6.--Limitations Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
8812F:		
Typic Hapludalfs	___	Equipment limitation, flooding, poor tilth, low pH, water erosion

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
7D3------------------ Atlas	4e	39	12	14	1.7	2.8
8F2------------------ Hickory	6e	---	---	---	2.0	3.4
30F------------------ Hamburg	7e	---	---	---	---	---
31A------------------ Pierron	3w	100	30	42	3.7	6.2
46A------------------ Herrick	2w	141	45	61	5.5	9.2
50A------------------ Virden	2w	144	46	60	---	---
75B------------------ Drury	2e	125	40	56	4.9	8.2
75C------------------ Drury	3e	122	39	55	4.8	8.0
75D------------------ Drury	3e	115	36	52	4.5	7.5
75F------------------ Drury	6e	---	---	---	3.6	6.0
79B------------------ Menfro	2e	127	39	53	5.1	8.6
79C2----------------- Menfro	3e	120	37	51	4.9	8.2
79D3----------------- Menfro	4e	104	32	44	4.2	7.0
79F------------------ Menfro	6e	---	---	---	3.7	6.3
79F3----------------- Menfro	7e	---	---	32	3.2	5.3
90A------------------ Bethalto	2w	149	44	60	5.6	9.3
109A----------------- Racoon	3w	108	35	48	4.1	6.8
123. Riverwash						
216G----------------- Stookey	7e	---	---	---	---	---

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
267A----------------- Caseyville	2w	134	41	54	5.2	8.7
267B----------------- Caseyville	2e	133	41	53	5.1	8.6
423A----------------- Millstadt	2w	118	30	43	4.6	7.7
437B----------------- Redbud	2e	115	36	50	5.0	8.4
438B----------------- Aviston	2e	143	45	60	5.4	9.1
438C2---------------- Aviston	3e	135	42	57	5.2	8.6
477B----------------- Winfield	2e	127	40	52	4.9	8.1
477C2---------------- Winfield	3e	120	38	50	4.6	7.7
491B----------------- Ruma	2e	121	35	52	5.0	8.2
491C2---------------- Ruma	3e	115	33	50	4.7	7.8
491D3---------------- Ruma	4e	99	28	43	4.0	6.7
515C3---------------- Bunkum	4e	86	32	41	3.3	5.5
515D3---------------- Bunkum	4e	80	30	38	3.1	5.1
517A----------------- Marine	2w	102	30	43	3.6	7.2
517B----------------- Marine	2e	101	30	43	3.6	7.1
582B----------------- Homen	2e	101	34	48	4.1	6.8
582B2---------------- Homen	2e	98	33	46	3.9	6.6
582C2---------------- Homen	3e	96	32	45	3.8	6.4
657A----------------- Burksville	3w	95	30	40	3.2	5.0
658F----------------- Sonsac	6e	---	---	---	---	4.0

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
785G----------------- Lacrescent	7e	---	---	---	---	---
801D. Orthents, silty						
802D. Orthents, loamy						
864. Pits, quarries						
878C3---------------- Coulterville-Grantfork	4e	72	24	32	2.6	4.6
880B2----------------		87	30	39	3.2	5.3
Coulterville--------	2e					
Darmstadt-----------	3e					
882A-----------------		102	33	47	4.1	7.0
Oconee--------------	2w					
Darmstadt-----------	3w					
Coulterville--------	2w					
882B-----------------		104	33	47	4.1	7.1
Oconee--------------	2e					
Coulterville--------	2e					
Darmstadt-----------	3e					
884B2---------------- Bunkum-Coulterville	2e	98	34	44	3.5	6.2
884C3---------------- Bunkum-Coulterville	4e	88	31	40	3.2	5.6
886F----------------- Ruma-Ursa	6e	---	---	---	---	4.4
886F3---------------- Ruma-Ursa	7e	---	---	---	2.0	3.3
897D3---------------- Bunkum-Atlas	6e	62	22	27	2.4	4.0
907D3---------------- Redbud-Colp	4e	74	24	33	3.1	5.2
988F----------------- Westmore-Neotoma	7e	---	---	---	---	---
993A----------------- Cowden-Piasa	3w	98	32	45	---	---
1071A---------------- Darwin, undrained	5w	---	---	---	---	---
1457A---------------- Booker, undrained	5w	---	---	---	---	---

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
1591A---------------- Fults, undrained	5w	---	---	---	---	---
3092B---------------- Sarpy	3w	64	23	31	---	---
3226A---------------- Wirt	3w	86	29	38	3.6	6.6
3288L---------------- Petrolia	4w	92	30	34	---	---
3333A---------------- Wakeland	3w	122	40	51	4.7	7.8
3333L---------------- Wakeland	4w	94	32	---	---	---
3334L---------------- Birds	4w	85	29	---	---	---
3336A---------------- Wilbur	3w	121	40	50	4.5	7.5
3391A---------------- Blake	3w	88	24	39	---	---
3394B---------------- Haynie	3w	85	32	38	---	---
3646A. Fluvaquents, loamy						
3847L. Fluvaquents-Orthents						
5079B---------------- Menfro, karst	2e	123	38	52	5.0	8.4
5079C---------------- Menfro, karst	4e	111	34	47	4.5	7.6
5079D---------------- Menfro, karst	4e	104	32	44	4.2	7.0
5079G---------------- Menfro, karst	7e	---	---	---	---	---
5491C---------------- Ruma, karst	4e	106	30	46	4.4	7.2
5491D---------------- Ruma, karst	4e	99	28	43	4.0	6.7
5491G---------------- Ruma, karst	7e	---	---	---	---	---
5582B---------------- Homen, karst	2e	101	34	48	4.1	6.8

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
5582C---------------- Homen, karst	3e	96	32	45	3.8	6.4
7430A---------------- Raddle	1	149	45	59	5.8	9.7
8038B---------------- Rocher	2e	98	34	45	3.6	6.6
8070A---------------- Beaucoup	2w	138	46	55	---	---
8071L---------------- Darwin	4w	84	30	40	---	---
8078A---------------- Arenzville	2w	138	42	56	5.4	9.0
8084A---------------- Okaw	3w	84	28	41	---	---
8122B---------------- Colp	2e	85	32	43	3.6	5.9
8122C---------------- Colp	4e	65	24	33	2.7	4.6
8180A---------------- Dupo	2w	132	43	55	5.2	8.7
8183A---------------- Shaffton	2w	130	43	52	5.0	8.3
8284A---------------- Tice	2w	153	47	61	5.7	9.5
8302A---------------- Ambraw	3w	132	43	52	---	---
8304B---------------- Landes	2e	98	34	45	3.7	6.1
8333A---------------- Wakeland	2w	135	45	57	5.2	8.7
8336A---------------- Wilbur	2w	134	44	55	5.0	8.3
8338B---------------- Hurst	2e	86	32	45	3.6	5.9
8394B---------------- Haynie	2e	95	36	42	3.6	5.9
8436B---------------- Meadowbank	2e	142	43	57	5.3	8.9
8457L---------------- Booker	4w	66	24	29	---	---

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Tons	AUM*
8591A---------------- Fults	3w	110	39	45	---	---
8592A---------------- Nameoki	2w	125	44	50	5.0	8.2
8787A---------------- Banlic	2w	115	37	46	4.2	7.0
8812F---------------- Typic Hapludalfs	6e	---	---	---	---	---

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 8.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
46A	Herrick silt loam, 0 to 2 percent slopes
50A	Virden silt loam, 0 to 2 percent slopes (where drained)
75B	Drury silt loam, 2 to 5 percent slopes
79B	Menfro silt loam, 2 to 5 percent slopes
90A	Bethalto silt loam, 0 to 2 percent slopes (where drained)
109A	Racoon silt loam, 0 to 2 percent slopes (where drained)
267A	Caseyville silt loam, 0 to 2 percent slopes (where drained)
267B	Caseyville silt loam, 2 to 5 percent slopes
423A	Millstadt silt loam, 0 to 2 percent slopes (where drained)
437B	Redbud silt loam, 2 to 5 percent slopes
438B	Aviston silt loam, 2 to 5 percent slopes
477B	Winfield silt loam, 2 to 5 percent slopes
491B	Ruma silt loam, 2 to 5 percent slopes
517A	Marine silt loam, 0 to 2 percent slopes (where drained)
517B	Marine silt loam, 2 to 5 percent slopes
582B	Homen silt loam, 2 to 5 percent slopes
582B2	Homen silt loam, 2 to 5 percent slopes, eroded
657A	Burksville silt loam, 0 to 2 percent slopes (where drained)
884B2	Bunkum-Coulterville silt loams, 2 to 5 percent slopes, eroded (where drained)
3226A	Wirt silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3333A	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3336A	Wilbur silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3391A	Blake silty clay loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3394B	Haynie silt loam, 2 to 5 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
5079B	Menfro silt loam, karst, 2 to 5 percent slopes, eroded
5582B	Homen silt loam, karst, 2 to 5 percent slopes
7430A	Raddle silt loam, 0 to 2 percent slopes, rarely flooded
8038B	Rocher loam, 2 to 5 percent slopes, occasionally flooded
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8078A	Arenzville silt loam, 0 to 2 percent slopes, occasionally flooded
8122B	Colp silt loam, 2 to 5 percent slopes, occasionally flooded
8180A	Dupo silt loam, 0 to 2 percent slopes, occasionally flooded
8183A	Shaffton clay loam, 0 to 2 percent slopes, occasionally flooded
8284A	Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded
8302A	Ambraw silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8304B	Landes very fine sandy loam, 2 to 5 percent slopes, occasionally flooded
8333A	Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8336A	Wilbur silt loam, 0 to 2 percent slopes, occasionally flooded
8394B	Haynie silt loam, 2 to 5 percent slopes, occasionally flooded
8436B	Meadowbank silt loam, 2 to 5 percent slopes, occasionally flooded
8787A	Banlic silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)

Table 9.--Forestland Productivity

(Only the soils suitable for production of commercial trees are listed)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
7D3:				
Atlas	Bur oak	70	57	Austrian pine, green ash, pin oak, red maple.
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
8F2:				
Hickory	Bitternut hickory	---	---	Black walnut, bur oak, sugar maple, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	White oak	85	72	
30F:				
Hamburg	Black oak	---	---	Bur oak, eastern redcedar, white oak.
	Bur oak	---	---	
	Eastern redcedar	---	---	
	Post oak	---	---	
	White oak	45	29	
31A:				
Pierron	---	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
46A:				
Herrick	---	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
75B:				
Drury	Green ash	---	---	Black walnut, eastern white pine, loblolly pine, northern red oak, shortleaf pine, sweetgum, tuliptree, white oak.
	Northern red oak	85	72	
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
75C:				
Drury	Green ash	---	---	Black walnut, eastern white pine, loblolly pine, northern red oak, shortleaf pine, sweetgum, tuliptree, white oak.
	Northern red oak	85	72	
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
75D:				
Drury	Green ash	---	---	Black walnut, eastern white pine, loblolly pine, northern red oak, shortleaf pine, sweetgum, tuliptree, white oak.
	Northern red oak	85	72	
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
75F:				
Drury	Green ash	---	---	Black walnut, eastern white pine, loblolly pine, northern red oak, shortleaf pine, sweetgum, tuliptree, white oak.
	Northern red oak	85	72	
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
79B:				
Menfro	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Northern red oak	81	57	
	Sugar maple	68	72	
	White ash	70	72	
	White oak	59	43	
79C2:				
Menfro	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Northern red oak	81	57	
	Sugar maple	68	72	
	White ash	70	72	
	White oak	59	43	
79D3:				
Menfro	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Northern red oak	81	57	
	Sugar maple	68	72	
	White ash	70	72	
	White oak	59	43	
79F:				
Menfro	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Northern red oak	81	57	
	Sugar maple	68	72	
	White ash	70	72	
	White oak	59	43	
79F3:				
Menfro	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Northern red oak	81	57	
	Sugar maple	68	72	
	White ash	70	72	
	White oak	59	43	
90A:				
Bethalto	Green ash	---	---	Eastern white pine, green ash, northern red oak, shortleaf pine.
	Northern red oak	---	---	
	White oak	70	57	
109A:				
Racoon	Green ash	---	---	Baldcypress, green ash, red maple, water tupelo.
	Pin oak	80	57	
	Post oak	80	57	
	White oak	---	---	
216G:				
Stookey	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Sugar maple	68	43	
	White ash	70	72	
	White oak	59	43	
267A:				
Caseyville	White oak	75	57	Eastern white pine, green ash, northern red oak, tuliptree, white oak.
267B:				
Caseyville	White oak	75	57	Eastern white pine, green ash, northern red oak, tuliptree, white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
423A:				
Millstadt	Northern red oak	70	57	Bur oak, northern red oak, white ash, white oak.
	Post oak	70	57	
	Shagbark hickory	---	---	
437B:				
Redbud	White oak	75	57	Black oak, eastern white pine, green ash, northern red oak, tuliptree.
477B:				
Winfield	Black oak	65	43	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	60	43	
	White oak	65	43	
477C2:				
Winfield	Black oak	65	43	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	60	43	
	White oak	65	43	
491B:				
Ruma	White oak	75	57	Black walnut, eastern white pine, green ash, sugar maple, tuliptree, white oak.
491C2:				
Ruma	White oak	75	57	Black walnut, eastern white pine, green ash, sugar maple, tuliptree, white oak.
491D3:				
Ruma	White oak	75	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
515C3:				
Bunkum	White oak	75	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
515D3:				
Bunkum	White oak	75	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
517A:				
Marine	Northern red oak	70	57	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
	Post oak	70	57	
	Shagbark hickory	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
517B:				
Marine	Northern red oak	70	57	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
	Post oak	70	57	
	Shagbark hickory	---	---	
582B:				
Homen	White oak	75	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
582B2:				
Homen	White oak	75	57	Black oak, eastern white pine, green ash, northern red oak, tuliptree.
582C2:				
Homen	White oak	75	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
657A:				
Burksville	Eastern cottonwood	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
	Green ash	60	57	
	White oak	70	57	
658F:				
Sonsac	Black oak	68	57	Eastern white pine, northern red oak, white ash, white oak.
	Black walnut	74	---	
	Eastern redcedar	42	43	
	Scarlet oak	68	57	
	White ash	60	43	
	White oak	61	43	
785G:				
Lacrescent	American basswood	62	57	American basswood, eastern white pine, northern red oak, red pine, white oak.
	Northern red oak	59	43	
	White oak	55	43	
802D:				
Orthents, loamy	---	---	---	Black walnut, northern red oak, tuliptree, white oak.
878C3:				
Coulterville	Black oak	---	---	Eastern redcedar, eastern white pine, green ash, white oak.
	Pignut hickory	---	---	
	White oak	70	57	
Grantfork	Black oak	70	57	Eastern redcedar, eastern white pine, green ash, white ash.
	Post oak	---	---	
	Shagbark hickory	---	---	
880B2:				
Coulterville	Black oak	---	---	Rocky Mountain Douglas-fir, blue spruce, eastern redcedar, eastern white pine, green ash.
	Pignut hickory	---	---	
	Post oak	---	---	
	White oak	70	57	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
880B2:				
Darmstadt	Black oak	70	57	Rocky Mountain Douglas-fir, blue spruce, eastern redcedar, eastern white pine, green ash.
	Pignut hickory	---	---	
	Post oak	---	---	
	White oak	70	57	
882A:				
Oconee	---	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
Darmstadt	Black oak	70	57	Eastern redcedar, eastern white pine, green ash, white oak.
	Pignut hickory	---	---	
	White oak	70	57	
Coulterville	Black oak	---	---	Eastern redcedar, eastern white pine, green ash, white oak.
	Pignut hickory	---	---	
	White oak	70	57	
882B:				
Oconee	---	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
Coulterville	Black oak	---	---	Rocky Mountain Douglas-fir, blue spruce, eastern redcedar, eastern white pine, green ash.
	Pignut hickory	---	---	
	White oak	70	57	
Darmstadt	Black oak	70	57	Rocky Mountain Douglas-fir, blue spruce, eastern redcedar, eastern white pine, green ash.
	Pignut hickory	---	---	
	Post oak	---	---	
	White oak	70	57	
884B2:				
Bunkum	White oak	75	57	Black oak, bur oak, green ash, northern red oak, pecan, white oak.
Coulterville	Black oak	---	---	Eastern redcedar, eastern white pine, green ash, white oak.
	Pignut hickory	---	---	
	White oak	70	57	
884C3:				
Bunkum	White oak	75	57	Black oak, bur oak, green ash, northern red oak, pecan, white oak.
Coulterville	Black oak	---	---	Black oak, eastern redcedar, green ash, pin oak, white oak.
	Pignut hickory	---	---	
	Post oak	---	---	
	White oak	70	57	
886F:				
Ruma	White oak	75	57	Black walnut, eastern white pine, green ash, sugar maple, tuliptree, white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
886F:				
Ursa	Black oak	70	57	Austrian pine, eastern redcedar, green ash, pin oak, red maple.
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
886F3:				
Ruma	White oak	75	57	Black oak, bur oak, green ash, northern red oak, pecan, white oak.
Ursa	Black oak	70	57	Eastern redcedar, green ash, pin oak, red maple.
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
897D3:				
Bunkum	White oak	75	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
Atlas	Bur oak	70	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash.
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
907D3:				
Redbud	White oak	75	57	Black oak, eastern white pine, green ash, northern red oak, tuliptree.
Colp	Bur oak	70	57	Black walnut, eastern white pine, green ash, northern red oak, tuliptree, white ash, white oak.
	Northern red oak	70	57	
	White ash	---	---	
	White oak	70	57	
988F:				
Westmore	Black walnut	---	---	Black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak.
	Northern red oak	68	57	
	Tuliptree	91	86	
	White ash	---	---	
Neotoma	Black cherry	---	---	Eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak.
	Black walnut	---	---	
	Northern red oak	85	72	
	Sugar maple	---	---	
	Tuliptree	105	114	
	White ash	---	---	
	White oak	---	---	
993A:				
Cowden	---	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
Piasa	---	---	---	Rocky Mountain Douglas-fir, blue spruce, eastern redcedar, eastern white pine, green ash.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
1071A:				
Darwin, undrained	American sycamore	---	---	Baldcypress, green ash, pin oak, red maple.
	Eastern cottonwood	---	---	
	Green ash	---	---	
	Pin oak	80	57	
	Swamp white oak	---	---	
1457A:				
Booker, undrained	Eastern cottonwood	85	86	Eastern cottonwood, green ash, pecan, pin oak, silver maple.
	Silver maple	80	29	
1591A:				
Fults, undrained	American sycamore	---	---	American sycamore, green ash, pin oak, red maple.
	Eastern cottonwood	---	---	
	Green ash	---	---	
	Pin oak	80	57	
	Swamp white oak	---	---	
3092B:				
Sarpy	Eastern cottonwood	95	114	American sycamore, black willow, eastern cottonwood.
	Silver maple	90	43	
3226A:				
Wirt	Tuliptree	105	114	Bur oak, eastern white pine, green ash, pin oak, swamp white oak, tuliptree.
3288L:				
Petrolia	American sycamore	---	---	Baldcypress, cherrybark oak, red maple, water tupelo.
	Cherrybark oak	---	---	
	Eastern cottonwood	100	129	
	Pin oak	90	72	
	Sweetgum	---	---	
3333A:				
Wakeland	Black walnut	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	Boxelder	---	---	
	Green ash	---	---	
	Pin oak	90	72	
3333L:				
Wakeland	Virginia pine	85	129	American sycamore, baldcypress, bur oak, green ash, pin oak, red maple, swamp white oak, sweetgum.
	Pin oak	90	72	
	Sweetgum	88	100	
	Tuliptree	90	86	
3334L:				
Birds	American sycamore	---	---	Baldcypress, cherrybark oak, pin oak, swamp white oak.
	Eastern cottonwood	100	129	
	Pin oak	90	72	
3336A:				
Wilbur	Tuliptree	100	114	Black cherry, bur oak, green ash, pin oak, red maple, swamp white oak, sweetgum.
3391A:				
Blake	American sycamore	---	---	American sycamore, eastern cottonwood, green ash, silver maple.
	Eastern cottonwood	115	172	
	Silver maple	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
3394B:				
Haynie	American sycamore	110	157	Black walnut, eastern cottonwood.
	Black walnut	---	---	
	Eastern cottonwood	110	157	
	Green ash	---	---	
3646A:				
Fluvaquents, loamy	Eastern cottonwood	75	72	Pin oak, red maple, swamp chestnut oak.
	Pin oak	70	57	
	Red maple	46	29	
	White ash	40	29	
3847L:				
Fluvaquents	Eastern cottonwood	75	72	Pin oak, red maple, swamp chestnut oak.
	Pin oak	70	57	
	Red maple	46	29	
	White ash	40	29	
Orthents	---	---	---	Black walnut, northern red oak, tuliptree, white oak.
5079B:				
Menfro, karst	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Northern red oak	81	57	
	Sugar maple	68	72	
	White ash	70	72	
	White oak	59	43	
5079C:				
Menfro, karst	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Northern red oak	81	57	
	Sugar maple	68	72	
	White ash	70	72	
	White oak	59	43	
5079D:				
Menfro, karst	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Northern red oak	81	57	
	Sugar maple	68	72	
	White ash	70	72	
	White oak	59	43	
5079G:				
Menfro, karst	Black oak	73	57	Black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak.
	Northern red oak	81	57	
	Sugar maple	68	72	
	White ash	70	72	
	White oak	59	43	
5491C:				
Ruma, karst	White oak	75	57	Black walnut, eastern white pine, green ash, sugar maple, tuliptree, white oak.
5491D:				
Ruma, karst	White oak	75	57	Black walnut, eastern white pine, green ash, sugar maple, tuliptree, white oak.
5491G:				
Ruma, karst	White oak	75	57	Black walnut, eastern white pine, green ash, sugar maple, tuliptree, white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
5582B:				
Homen, karst	White oak	75	57	Black oak, eastern white pine, green ash, northern red oak, tuliptree.
5582C:				
Homen, karst	White oak	75	57	Black oak, eastern white pine, green ash, northern red oak, tuliptree.
8038B:				
Rocher	American sycamore	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, sugar maple, sweetgum, tuliptree.
	Eastern cottonwood	105	143	
	Sweetgum	---	---	
	Tuliptree	95	100	
8070A:				
Beaucoup	American sycamore	---	---	American sycamore, eastern cottonwood, pin oak, red maple, sweetgum.
	Cherrybark oak	---	---	
	Eastern cottonwood	100	129	
	Pin oak	90	72	
	Sweetgum	---	---	
8071L:				
Darwin	American sycamore	---	---	Green ash, pin oak, red maple, swamp white oak.
	Eastern cottonwood	---	---	
	Green ash	---	---	
	Pin oak	80	57	
	Swamp white oak	---	---	
8078A:				
Arenzville	Bur oak	---	---	Black walnut, eastern white pine, northern red oak, red pine, white spruce.
	Northern red oak	65	43	
	Silver maple	---	---	
8084A:				
Okaw	Black oak	55	43	Baldcypress, green ash, pin oak, red maple, swamp white oak, water tupelo.
	Blackjack oak	60	43	
	Pin oak	70	57	
	White oak	---	---	
8122B:				
Colp	Bur oak	70	57	Black walnut, eastern white pine, green ash, northern red oak, tuliptree, white ash, white oak.
	Northern red oak	70	57	
	White ash	---	---	
	White oak	70	57	
8122C:				
Colp	Bur oak	70	57	Black walnut, eastern white pine, green ash, northern red oak, tuliptree, white ash, white oak.
	Northern red oak	70	57	
	White ash	---	---	
	White oak	70	57	
8284A:				
Tice	Virginia pine	90	129	American sycamore, cherrybark oak, eastern cottonwood, green ash, red maple, tuliptree.
	Eastern cottonwood	---	---	
	Pin oak	96	72	
	Sweetgum	86	100	
	Tuliptree	90	86	
	White ash	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
8333A:				
Wakeland	Virginia pine	85	129	American sycamore, baldcypress, bur oak, green ash, pin oak, red maple, swamp white oak, sweetgum.
	Pin oak	90	72	
	Sweetgum	88	100	
	Tuliptree	90	86	
8336A:				
Wilbur	Tuliptree	100	114	Black cherry, black locust, black walnut, eastern white pine, northern red oak, tuliptree, white ash, white oak.
8338B:				
Hurst	Bur oak	---	---	Austrian pine, baldcypress, eastern redcedar, green ash, pin oak, red maple, shortleaf pine.
	Southern red oak	70	57	
	White ash	---	---	
	White oak	70	57	
8394B:				
Haynie	American sycamore	110	157	Black walnut, eastern cottonwood.
	Black walnut	---	---	
	Eastern cottonwood	110	157	
	Green ash	---	---	
8457L:				
Booker	Eastern cottonwood	85	86	Eastern cottonwood, green ash, pecan, pin oak, silver maple.
	Silver maple	80	29	
8591A:				
Fults	American sycamore	---	---	American sycamore, green ash, pin oak, red maple.
	Eastern cottonwood	---	---	
	Green ash	---	---	
	Pin oak	80	57	
	Swamp white oak	---	---	
8787A:				
Banlic	Black walnut	---	---	American sycamore, black walnut, green ash, sweetgum, tuliptree, white oak.
	Pin oak	90	72	
	Southern red oak	85	72	
	Tuliptree	---	---	
	White oak	75	57	
8812F:				
Typic Hapludalfs	Bur oak	---	---	Black walnut, eastern white pine, green ash, tuliptree, white oak.
	Shagbark hickory	---	---	
	White oak	85	72	

Table 10a.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
7D3:						
Atlas	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.27	Slope/erodibility	1.00	Slope	1.00
					Wetness	0.50
					Strength	0.50
					Stickiness	0.50
8F2:						
Hickory	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.53	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
30F:						
Hamburg	Severe:		Severe:		Poorly suited:	
	Slope/erodibility	0.66	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
31A:						
Pierron	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.01	Slope/erodibility	0.06	Ponding	1.00
					Wetness	1.00
					Strength	0.50
46A:						
Herrick	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
					Wetness	0.50
50A:						
Virden	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Wetness	1.00
					Strength	0.50
75B:						
Drury	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
75C:						
Drury	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.20	Slope/erodibility	0.89	Strength	0.50
					Slope	0.50
75D:						
Drury	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.34	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
75F:						
Drury	Severe:		Severe:		Poorly suited:	
	Slope/erodibility	0.66	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
79B:						
Menfro	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
79C2:						
Menfro	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.20	Slope/erodibility	0.89	Strength	0.50
					Slope	0.50
79D3:						
Menfro	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.34	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
79F:						
Menfro	Severe:		Severe:		Poorly suited:	
	Slope/erodibility	0.66	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
79F3:						
Menfro	Severe:		Severe:		Poorly suited:	
	Slope/erodibility	0.66	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
90A:						
Bethalto	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	0.50
					Strength	0.50
109A:						
Racoon	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Wetness	1.00
					Strength	0.50
123:						
Riverwash	Not rated		Not rated		Not rated	
216G:						
Stookey	Very severe:		Severe:		Poorly suited:	
	Slope/erodibility	1.00	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
267A:						
Caseyville	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	0.50
					Strength	0.50
267B:						
Caseyville	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Wetness	0.50
					Strength	0.50
423A:						
Millstadt	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	0.50
					Strength	0.50
437B:						
Redbud	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
438B:						
Aviston	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.08	Slope/erodibility	0.44	Strength	0.50
438C2:						
Aviston	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.16	Slope/erodibility	0.89	Strength	0.50
					Slope	0.50
477B:						
Winfield	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.09	Slope/erodibility	0.39	Strength	0.50
477C2:						
Winfield	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.18	Slope/erodibility	0.83	Strength	0.50
					Slope	0.50
491B:						
Ruma	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
491C2:						
Ruma	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.20	Slope/erodibility	0.89	Strength	0.50
					Slope	0.50
491D3:						
Ruma	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.34	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
515C3:						
Bunkum	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.18	Slope/erodibility	0.83	Strength	0.50
					Slope	0.50
					Wetness	0.50
515D3:						
Bunkum	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.34	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
					Wetness	0.50
517A:						
Marine	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	0.50
					Strength	0.50
517B:						
Marine	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.09	Slope/erodibility	0.39	Wetness	0.50
					Strength	0.50
582B:						
Homen	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.09	Slope/erodibility	0.39	Strength	0.50
582B2:						
Homen	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
582C2:						
Homen	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.18	Slope/erodibility	0.83	Strength	0.50
					Slope	0.50
657A:						
Burksville	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.01	Slope/erodibility	0.06	Ponding	1.00
					Wetness	1.00
					Strength	0.50
658F:						
Sonsac	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.53	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
785G:						
Lacrescent	Very severe:		Severe:		Poorly suited:	
	Slope/erodibility	1.00	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
801D:						
Orthents, silty	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.49	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
802D:						
Orthents, loamy	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.39	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
864:						
Pits, quarries	Not rated		Not rated		Not rated	
878C3:						
Coulterville	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.20	Slope/erodibility	0.89	Wetness	0.50
					Slope	0.50
Grantfork	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.20	Slope/erodibility	0.89	Wetness	0.50
					Strength	0.50
					Slope	0.50
880B2:						
Coulterville	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.09	Slope/erodibility	0.39	Wetness	0.50
					Strength	0.50
Darmstadt	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.09	Slope/erodibility	0.39	Wetness	0.50
					Strength	0.50
882A:						
Oconee	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	0.50
					Strength	0.50
Darmstadt	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	0.50
					Strength	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
882A:						
Coulterville	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	0.50
					Strength	0.50
882B:						
Oconee	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.09	Slope/erodibility	0.39	Wetness	0.50
					Strength	0.50
Coulterville	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.09	Slope/erodibility	0.39	Wetness	0.50
					Strength	0.50
Darmstadt	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.09	Slope/erodibility	0.39	Wetness	0.50
					Strength	0.50
884B2:						
Bunkum	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
					Wetness	0.50
Coulterville	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Wetness	0.50
					Strength	0.50
884C3:						
Bunkum	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.20	Slope/erodibility	0.89	Strength	0.50
					Slope	0.50
					Wetness	0.50
Coulterville	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.20	Slope/erodibility	0.89	Wetness	0.50
					Strength	0.50
					Slope	0.50
886F:						
Ruma	Severe:		Severe:		Poorly suited:	
	Slope/erodibility	0.66	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
Ursa	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.53	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
886F3:						
Ruma	Severe:		Severe:		Poorly suited:	
	Slope/erodibility	0.66	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
Ursa	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.53	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
					Stickiness	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
897D3:						
Bunkum	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.34	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
					Wetness	0.50
Atlas	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.27	Slope/erodibility	1.00	Slope	1.00
					Wetness	0.50
					Strength	0.50
					Stickiness	0.50
907D3:						
Redbud	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.34	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
Colp	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.27	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
					Wetness	0.50
988F:						
Westmore	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.53	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
Neotoma	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.53	Slope/erodibility	1.00	Slope	1.00
993A:						
Cowden	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.01	Slope/erodibility	0.06	Ponding	1.00
					Wetness	1.00
					Strength	0.50
Piasa	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.01	Slope/erodibility	0.06	Ponding	1.00
					Wetness	1.00
					Strength	0.50
1071A:						
Darwin, undrained	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Stickiness	0.50
					Strength	0.50
1457A:						
Booker, undrained	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Stickiness	0.50
					Strength	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
1591A:						
Fults, undrained	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Stickiness	0.50
					Strength	0.50
3092B:						
Sarpy	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.08	Slope/erodibility	0.25	Flooding	1.00
					Sandiness	0.50
3226A:						
Wirt	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Strength	0.50
3288L:						
Petrolia	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Strength	0.50
3333A:						
Wakeland	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Wetness	0.50
					Strength	0.50
3333L:						
Wakeland	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Wetness	0.50
					Strength	0.50
3334L:						
Birds	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Strength	0.50
3336A:						
Wilbur	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Strength	0.50
					Wetness	0.50
3391A:						
Blake	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Wetness	0.50
					Strength	0.50
3394B:						
Haynie	Slight:		Moderate:		Poorly suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Flooding	1.00
					Strength	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3646A:						
Fluvaquents, loamy	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Strength	0.50
3847L:						
Fluvaquents	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Strength	0.50
Orthents	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.39	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
5079B:						
Menfro, karst	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
5079C:						
Menfro, karst	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.20	Slope/erodibility	0.89	Strength	0.50
					Slope	0.50
5079D:						
Menfro, karst	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.46	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
5079G:						
Menfro, karst	Very severe:		Severe:		Poorly suited:	
	Slope/erodibility	1.00	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
5491C:						
Ruma, karst	Slight:		Severe:		Moderately suited:	
	Slope/erodibility	0.22	Slope/erodibility	1.00	Strength	0.50
					Slope	0.50
5491D:						
Ruma, karst	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.46	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
5491G:						
Ruma, karst	Very severe:		Severe:		Poorly suited:	
	Slope/erodibility	1.00	Slope/erodibility	1.00	Slope	1.00
					Strength	0.50
5582B:						
Homen, karst	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
5582C:						
Homen, karst	Slight:		Severe:		Moderately suited:	
	Slope/erodibility	0.22	Slope/erodibility	1.00	Strength	0.50
					Slope	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
7430A:						
Raddle	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
8038B:						
Rocher	Slight:		Moderate:		Poorly suited:	
	Slope/erodibility	0.08	Slope/erodibility	0.44	Flooding	1.00
					Strength	0.50
8070A:						
Beaucoup	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Strength	0.50
8071L:						
Darwin	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Stickiness	0.50
					Strength	0.50
8078A:						
Arenzville	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Strength	0.50
8084A:						
Okaw	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Strength	0.50
8122B:						
Colp	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Flooding	0.50
					Strength	0.50
					Wetness	0.50
8122C:						
Colp	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.16	Slope/erodibility	0.89	Flooding	0.50
					Strength	0.50
					Slope	0.50
					Wetness	0.50
8180A:						
Dupo	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Wetness	0.50
					Strength	0.50
8183A:						
Shaffton	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Strength	0.50
					Wetness	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
8284A:						
Tice	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Strength	0.50
					Wetness	0.50
8302A:						
Ambraw	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Strength	0.50
8304B:						
Landes	Slight:		Slight:		Moderately suited:	
	Slope/erodibility	0.08	Slope/erodibility	0.25	Flooding	0.50
8333A:						
Wakeland	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Wetness	0.50
					Strength	0.50
8336A:						
Wilbur	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Strength	0.50
					Wetness	0.50
8338B:						
Hurst	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Flooding	0.50
					Strength	0.50
					Wetness	0.50
8394B:						
Haynie	Slight:		Moderate:		Poorly suited:	
	Slope/erodibility	0.10	Slope/erodibility	0.44	Flooding	1.00
					Strength	0.50
8436B:						
Meadowbank	Slight:		Moderate:		Moderately suited:	
	Slope/erodibility	0.08	Slope/erodibility	0.44	Flooding	0.50
					Strength	0.50
8457L:						
Booker	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Stickiness	0.50
					Strength	0.50
8591A:						
Fults	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Stickiness	0.50
					Strength	0.50

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
8592A:						
Nameoki-------------	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Stickiness	0.50
					Strength	0.50
					Wetness	0.50
8787A:						
Banlic--------------	Slight:		Slight:		Poorly suited:	
	Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
					Wetness	0.50
					Strength	0.50
8812F:						
Typic Hapludalfs----	Moderate:		Severe:		Poorly suited:	
	Slope/erodibility	0.53	Slope/erodibility	1.00	Slope	1.00
					Flooding	0.50
					Strength	0.50

Table 10b.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:						
Atlas	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
			Slope	0.50	Stickiness	0.50
8F2:						
Hickory	Moderately suited:		Unsuited:		Moderately suited:	
	Stickiness	0.50	Slope	1.00	Strength	0.50
			Stickiness	0.50	Slope	0.50
30F:						
Hamburg	Well suited		Unsuited:		Moderately suited:	
			Slope	1.00	Strength	0.50
					Slope	0.50
31A:						
Pierron	Well suited		Well suited		Moderately suited:	
					Strength	0.50
46A:						
Herrick	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
50A:						
Virden	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
75B:						
Drury	Well suited		Well suited		Moderately suited:	
					Strength	0.50
75C:						
Drury	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
75D:						
Drury	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
75F:						
Drury	Well suited		Unsuited:		Moderately suited:	
			Slope	1.00	Strength	0.50
					Slope	0.50
79B:						
Menfro	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
79C2:						
Menfro	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Slope	0.50	Strength	0.50
			Stickiness	0.50		

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
79D3:						
Menfro--------------	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Slope	0.50	Strength	0.50
			Stickiness	0.50		
79F:						
Menfro--------------	Moderately suited:		Unsuited:		Moderately suited:	
	Stickiness	0.50	Slope	1.00	Strength	0.50
			Stickiness	0.50	Slope	0.50
79F3:						
Menfro--------------	Moderately suited:		Unsuited:		Moderately suited:	
	Stickiness	0.50	Slope	1.00	Strength	0.50
			Stickiness	0.50	Slope	0.50
90A:						
Bethalto------------	Well suited		Well suited		Moderately suited:	
					Strength	0.50
109A:						
Racoon--------------	Well suited		Well suited		Moderately suited:	
					Strength	0.50
123:						
Riverwash-----------	Not rated		Not rated		Not rated	
216G:						
Stookey-------------	Moderately suited:		Unsuited:		Poorly suited:	
	Slope	0.50	Slope	1.00	Slope	1.00
					Strength	0.50
267A:						
Caseyville----------	Well suited		Well suited		Moderately suited:	
					Strength	0.50
267B:						
Caseyville----------	Well suited		Well suited		Moderately suited:	
					Strength	0.50
423A:						
Millstadt-----------	Well suited		Well suited		Moderately suited:	
					Strength	0.50
437B:						
Redbud--------------	Well suited		Well suited		Moderately suited:	
					Strength	0.50
438B:						
Aviston-------------	Well suited		Well suited		Moderately suited:	
					Strength	0.50
438C2:						
Aviston-------------	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
477B:						
Winfield------------	Well suited		Well suited		Moderately suited:	
					Strength	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
477C2:						
Winfield	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
491B:						
Ruma	Well suited		Well suited		Moderately suited:	
					Strength	0.50
491C2:						
Ruma	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
491D3:						
Ruma	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Slope	0.50	Strength	0.50
			Stickiness	0.50		
515C3:						
Bunkum	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
515D3:						
Bunkum	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
517A:						
Marine	Well suited		Well suited		Moderately suited:	
					Strength	0.50
517B:						
Marine	Well suited		Well suited		Moderately suited:	
					Strength	0.50
582B:						
Homen	Well suited		Well suited		Moderately suited:	
					Strength	0.50
582B2:						
Homen	Well suited		Well suited		Moderately suited:	
					Strength	0.50
582C2:						
Homen	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
657A:						
Burksville	Well suited		Well suited		Moderately suited:	
					Strength	0.50
658F:						
Sonsac	Poorly suited:		Unsuited:		Moderately suited:	
	Stickiness	0.75	Slope	1.00	Strength	0.50
	Rock fragments	0.50	Stickiness	0.75	Slope	0.50
			Rock fragments	0.75		
785G:						
Lacrescent	Moderately suited:		Unsuited:		Poorly suited:	
	Slope	0.50	Slope	1.00	Slope	1.00
			Rock fragments	0.50	Strength	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
801D:						
Orthents, silty	Well suited		Poorly suited:		Moderately suited:	
			Slope	0.75	Strength	0.50
					Slope	0.50
802D:						
Orthents, loamy	Well suited		Poorly suited:		Moderately suited:	
			Slope	0.75	Strength	0.50
					Slope	0.50
864:						
Pits, quarries	Not rated		Not rated		Not rated	
878C3:						
Coulterville	Well suited		Moderately suited:		Well suited	
			Slope	0.50		
Grantfork	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
880B2:						
Coulterville	Well suited		Well suited		Moderately suited:	
					Strength	0.50
Darmstadt	Well suited		Well suited		Moderately suited:	
					Strength	0.50
882A:						
Oconee	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
Darmstadt	Well suited		Well suited		Moderately suited:	
					Strength	0.50
Coulterville	Well suited		Well suited		Moderately suited:	
					Strength	0.50
882B:						
Oconee	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
Coulterville	Well suited		Well suited		Moderately suited:	
					Strength	0.50
Darmstadt	Well suited		Well suited		Moderately suited:	
					Strength	0.50
884B2:						
Bunkum	Well suited		Well suited		Moderately suited:	
					Strength	0.50
Coulterville	Well suited		Well suited		Moderately suited:	
					Strength	0.50
884C3:						
Bunkum	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
Coulterville	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
886F:						
Ruma	Well suited		Unsuited:		Moderately suited:	
			Slope	1.00	Strength	0.50
					Slope	0.50
Ursa	Poorly suited:		Unsuited:		Moderately suited:	
	Stickiness	0.75	Slope	1.00	Strength	0.50
			Stickiness	0.75	Slope	0.50
886F3:						
Ruma	Well suited		Unsuited:		Moderately suited:	
			Slope	1.00	Strength	0.50
					Slope	0.50
Ursa	Poorly suited:		Unsuited:		Moderately suited:	
	Stickiness	0.75	Slope	1.00	Strength	0.50
			Stickiness	0.75	Slope	0.50
					Stickiness	0.50
897D3:						
Bunkum	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
Atlas	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
			Slope	0.50	Stickiness	0.50
907D3:						
Redbud	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
Colp	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
			Slope	0.50		
988F:						
Westmore	Well suited		Unsuited:		Moderately suited:	
			Slope	1.00	Strength	0.50
					Slope	0.50
Neotoma	Moderately suited:		Unsuited:		Moderately suited:	
	Rock fragments	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.75		
993A:						
Cowden	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
Piasa	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
1071A:						
Darwin, undrained	Unsuited:		Unsuited:		Poorly suited:	
	Wetness	1.00	Wetness	1.00	Wetness	1.00
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
					Stickiness	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
1457A:						
Booker, undrained	Unsuited:		Unsuited:		Poorly suited:	
	Wetness	1.00	Wetness	1.00	Wetness	1.00
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
					Stickiness	0.50
1591A:						
Fults, undrained	Unsuited:		Unsuited:		Poorly suited:	
	Wetness	1.00	Wetness	1.00	Wetness	1.00
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
					Stickiness	0.50
3092B:						
Sarpy	Moderately suited:		Moderately suited:		Moderately suited:	
	Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
3226A:						
Wirt	Well suited		Well suited		Moderately suited:	
					Strength	0.50
3288L:						
Petrolia	Well suited		Well suited		Moderately suited:	
					Strength	0.50
3333A:						
Wakeland	Well suited		Well suited		Moderately suited:	
					Strength	0.50
3333L:						
Wakeland	Well suited		Well suited		Moderately suited:	
					Strength	0.50
3334L:						
Birds	Well suited		Well suited		Moderately suited:	
					Strength	0.50
3336A:						
Wilbur	Well suited		Well suited		Moderately suited:	
					Strength	0.50
3391A:						
Blake	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
3394B:						
Haynie	Well suited		Well suited		Moderately suited:	
					Strength	0.50
3646A:						
Fluvaquents, loamy	Well suited		Well suited		Moderately suited:	
					Strength	0.50
3847L:						
Fluvaquents	Well suited		Well suited		Moderately suited:	
					Strength	0.50
Orthents	Well suited		Poorly suited:		Moderately suited:	
			Slope	0.75	Strength	0.50
					Slope	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
5079B:						
Menfro, karst	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
5079C:						
Menfro, karst	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Slope	0.50	Strength	0.50
			Stickiness	0.50		
5079D:						
Menfro, karst	Moderately suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.50	Slope	0.75	Strength	0.50
			Stickiness	0.50		
5079G:						
Menfro, karst	Moderately suited:		Unsuited:		Poorly suited:	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
5491C:						
Ruma, karst	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Slope	0.50	Strength	0.50
			Stickiness	0.50		
5491D:						
Ruma, karst	Moderately suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.50	Slope	0.75	Strength	0.50
			Stickiness	0.50		
5491G:						
Ruma, karst	Moderately suited:		Unsuited:		Poorly suited:	
	Slope	0.50	Slope	1.00	Slope	1.00
					Strength	0.50
5582B:						
Homen, karst	Well suited		Well suited		Moderately suited:	
					Strength	0.50
5582C:						
Homen, karst	Well suited		Moderately suited:		Moderately suited:	
			Slope	0.50	Strength	0.50
7430A:						
Raddle	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8038B:						
Rocher	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8070A:						
Beaucoup	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8071L:						
Darwin	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
					Stickiness	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
8078A:						
Arenzville	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8084A:						
Okaw	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
8122B:						
Colp	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
8122C:						
Colp	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
			Slope	0.50		
8180A:						
Dupo	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8183A:						
Shaffton	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8284A:						
Tice	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8302A:						
Ambraw	Moderately suited:		Moderately suited:		Moderately suited:	
	Stickiness	0.50	Stickiness	0.50	Strength	0.50
8304B:						
Landes	Well suited		Well suited		Well suited	
8333A:						
Wakeland	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8336A:						
Wilbur	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8338B:						
Hurst	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
8394B:						
Haynie	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8436B:						
Meadowbank	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8457L:						
Booker	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
					Stickiness	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
8591A:						
Fults	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
					Stickiness	0.50
8592A:						
Nameoki	Poorly suited:		Poorly suited:		Moderately suited:	
	Stickiness	0.75	Stickiness	0.75	Strength	0.50
					Stickiness	0.50
8787A:						
Banlic	Well suited		Well suited		Moderately suited:	
					Strength	0.50
8812F:						
Typic Hapludalfs	Moderately suited:		Unsuited:		Moderately suited:	
	Stickiness	0.50	Slope	1.00	Strength	0.50
			Stickiness	0.50	Slope	0.50

Table 10c.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:						
Atlas	Poorly suited:		Well suited		High:	
	Stickiness	0.50			Wetness	1.00
8F2:						
Hickory	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
30F:						
Hamburg	Poorly suited:		Poorly suited:		Moderate:	
	Slope	0.50	Slope	0.50	Lime	0.50
31A:						
Pierron	Well suited		Well suited		High:	
					Wetness	1.00
46A:						
Herrick	Well suited		Well suited		Low	
50A:						
Virden	Well suited		Well suited		High:	
					Wetness	1.00
75B:						
Drury	Well suited		Well suited		Low	
75C:						
Drury	Well suited		Well suited		Low	
75D:						
Drury	Well suited		Well suited		Low	
75F:						
Drury	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
79B:						
Menfro	Well suited		Well suited		Low	
79C2:						
Menfro	Well suited		Well suited		Low	
79D3:						
Menfro	Well suited		Well suited		Low	
79F:						
Menfro	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
79F3:						
Menfro	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
90A:						
Bethalto	Well suited		Well suited		High:	
					Wetness	1.00
109A:						
Racoon	Well suited		Well suited		High:	
					Wetness	1.00
123:						
Riverwash	Not rated		Not rated		Not rated	
216G:						
Stookey	Unsuited:		Unsuited:		Low	
	Slope	1.00	Slope	1.00		
267A:						
Caseyville	Well suited		Well suited		High:	
					Wetness	1.00
267B:						
Caseyville	Well suited		Well suited		High:	
					Wetness	1.00
423A:						
Millstadt	Well suited		Well suited		High:	
					Wetness	1.00
437B:						
Redbud	Well suited		Well suited		Low	
438B:						
Aviston	Well suited		Well suited		Low	
438C2:						
Aviston	Well suited		Well suited		Low	
477B:						
Winfield	Well suited		Well suited		Low	
477C2:						
Winfield	Well suited		Well suited		Low	
491B:						
Ruma	Well suited		Well suited		Low	
491C2:						
Ruma	Well suited		Well suited		Low	
491D3:						
Ruma	Well suited		Well suited		Low	
515C3:						
Bunkum	Well suited		Well suited		Low	
515D3:						
Bunkum	Well suited		Well suited		Low	
517A:						
Marine	Well suited		Well suited		High:	
					Wetness	1.00

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
517B:						
Marine	Well suited		Well suited		High:	
					Wetness	1.00
582B:						
Homen	Well suited		Well suited		Low	
582B2:						
Homen	Well suited		Well suited		Low	
582C2:						
Homen	Well suited		Well suited		Low	
657A:						
Burksville	Well suited		Well suited		High:	
					Wetness	1.00
658F:						
Sonsac	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
	Rock fragments	0.50				
	Stickiness	0.50				
785G:						
Lacrescent	Unsuited:		Unsuited:		Low	
	Slope	1.00	Slope	1.00		
801D:						
Orthents, silty	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
802D:						
Orthents, loamy	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
864:						
Pits, quarries	Not rated		Not rated		Not rated	
878C3:						
Coulterville	Well suited		Well suited		High:	
					Wetness	1.00
Grantfork	Well suited		Well suited		High:	
					Wetness	1.00
880B2:						
Coulterville	Well suited		Well suited		High:	
					Wetness	1.00
Darmstadt	Well suited		Well suited		High:	
					Wetness	1.00
882A:						
Oconee	Well suited		Well suited		High:	
					Wetness	1.00
Darmstadt	Well suited		Well suited		High:	
					Wetness	1.00
Coulterville	Well suited		Well suited		High:	
					Wetness	1.00

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
882B:						
Oconee	Well suited		Well suited		High:	
					Wetness	1.00
Coulterville	Well suited		Well suited		High:	
					Wetness	1.00
Darmstadt	Well suited		Well suited		High:	
					Wetness	1.00
884B2:						
Bunkum	Well suited		Well suited		Low	
Coulterville	Well suited		Well suited		High:	
					Wetness	1.00
884C3:						
Bunkum	Well suited		Well suited		Low	
Coulterville	Well suited		Well suited		High:	
					Wetness	1.00
886F:						
Ruma	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
Ursa	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
	Stickiness	0.50				
886F3:						
Ruma	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
Ursa	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
	Stickiness	0.50				
897D3:						
Bunkum	Well suited		Well suited		Low	
Atlas	Poorly suited:		Well suited		High:	
	Stickiness	0.50			Wetness	1.00
907D3:						
Redbud	Well suited		Well suited		Low	
Colp	Poorly suited:		Well suited		Low	
	Stickiness	0.50				
988F:						
Westmore	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
Neotoma	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
	Rock fragments	0.50				

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
993A:						
Cowden	Well suited		Well suited		High:	
					Wetness	1.00
Piasa	Poorly suited:		Well suited		High:	
	Stickiness	0.50			Wetness	1.00
1071A:						
Darwin, undrained	Unsuited:		Unsuited:		High:	
	Wetness	1.00	Wetness	1.00	Wetness	1.00
	Stickiness	0.50				
1457A:						
Booker, undrained	Unsuited:		Unsuited:		High:	
	Wetness	1.00	Wetness	1.00	Wetness	1.00
	Stickiness	0.50				
1591A:						
Fults, undrained	Unsuited:		Unsuited:		High:	
	Wetness	1.00	Wetness	1.00	Wetness	1.00
	Stickiness	0.50				
3092B:						
Sarpy	Well suited		Well suited		Low	
3226A:						
Wirt	Well suited		Well suited		Low	
3288L:						
Petrolia	Well suited		Well suited		High:	
					Wetness	1.00
3333A:						
Wakeland	Well suited		Well suited		High:	
					Wetness	1.00
3333L:						
Wakeland	Well suited		Well suited		High:	
					Wetness	1.00
3334L:						
Birds	Well suited		Well suited		High:	
					Wetness	1.00
3336A:						
Wilbur	Well suited		Well suited		Low	
3391A:						
Blake	Well suited		Well suited		High:	
					Wetness	1.00
					Lime	0.50
					Soil reaction	0.50
3394B:						
Haynie	Well suited		Well suited		Moderate:	
					Lime	0.50
					Soil reaction	0.50
3646A:						
Fluvaquents, loamy	Well suited		Well suited		High:	
					Wetness	1.00

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3847L:						
Fluvaquents	Well suited		Well suited		High:	
					Wetness	1.00
Orthents	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
5079B:						
Menfro, karst	Well suited		Well suited		Low	
5079C:						
Menfro, karst	Well suited		Well suited		Low	
5079D:						
Menfro, karst	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
5079G:						
Menfro, karst	Unsuited:		Unsuited:		Low	
	Slope	1.00	Slope	1.00		
5491C:						
Ruma, karst	Well suited		Well suited		Low	
5491D:						
Ruma, karst	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		
5491G:						
Ruma, karst	Unsuited:		Unsuited:		Low	
	Slope	1.00	Slope	1.00		
5582B:						
Homen, karst	Well suited		Well suited		Low	
5582C:						
Homen, karst	Well suited		Well suited		Low	
7430A:						
Raddle	Well suited		Well suited		Low	
8038B:						
Rocher	Well suited		Well suited		Moderate:	
					Lime	0.50
8070A:						
Beaucoup	Well suited		Well suited		High:	
					Wetness	1.00
8071L:						
Darwin	Poorly suited:		Well suited		High:	
	Stickiness	0.50			Wetness	1.00
8078A:						
Arenzville	Well suited		Well suited		Low	
8084A:						
Okaw	Well suited		Well suited		High:	
					Wetness	1.00

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
8122B:						
Colp	Poorly suited:		Well suited		Low	
	Stickiness	0.50				
8122C:						
Colp	Poorly suited:		Well suited		Low	
	Stickiness	0.50				
8180A:						
Dupo	Well suited		Well suited		High:	
					Wetness	1.00
8183A:						
Shaffton	Well suited		Well suited		Low	
8284A:						
Tice	Well suited		Well suited		Low	
8302A:						
Ambraw	Well suited		Well suited		High:	
					Wetness	1.00
8304B:						
Landes	Well suited		Well suited		Low	
8333A:						
Wakeland	Well suited		Well suited		High:	
					Wetness	1.00
8336A:						
Wilbur	Well suited		Well suited		Low	
8338B:						
Hurst	Poorly suited:		Well suited		Low	
	Stickiness	0.50				
8394B:						
Haynie	Well suited		Well suited		Moderate:	
					Lime	0.50
					Soil reaction	0.50
8436B:						
Meadowbank	Well suited		Well suited		Low	
8457L:						
Booker	Poorly suited:		Well suited		High:	
	Stickiness	0.50			Wetness	1.00
8591A:						
Fults	Poorly suited:		Well suited		High:	
	Stickiness	0.50			Wetness	1.00
8592A:						
Nameoki	Poorly suited:		Well suited		Low	
	Stickiness	0.50				
8787A:						
Banlic	Well suited		Well suited		High:	
					Wetness	1.00

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8812F:						
Typic Hapludalfs----	Poorly suited:		Poorly suited:		Low	
	Slope	0.50	Slope	0.50		

Table 11.--Windbreaks and Environmental Plantings

(Only the soils suitable for windbreaks and environmental plantings are listed. Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
7D3: Atlas	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	Washington hawthorn, blackhaw, hazelnut, nannyberry, shadbush	Baldcypress, eastern redcedar, green ash	Norway spruce, eastern white pine, pin oak	Eastern cottonwood
8F2: Hickory	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush, tamarack, northern whitecedar	Baldcypress, common hackberry, green ash, tuliptree, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
31A: Pierron	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
46A: Herrick	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas-fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
50A:					
Virden	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush, witchhazel	Norway spruce, baldcypress, green ash, southern red oak, eastern white pine	Eastern cottonwood, pin oak
75B:					
Drury	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
75C:					
Drury	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
75D:					
Drury	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
75F:					
Drury	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
79B:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Nannyberry, shadbush, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, pin oak, eastern white pine
79C2:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Nannyberry, shadbush, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, pin oak, eastern white pine

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
79D3:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Nannyberry, shadbush, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, pin oak, eastern white pine
79F:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Nannyberry, shadbush, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, pin oak, eastern white pine
79F3:					
Menfro	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Nannyberry, shadbush, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, pin oak, eastern white pine
90A:					
Bethalto	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, nannyberry, southern red oak	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
109A:					
Racoon	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush, witchhazel, northern whitecedar	Norway spruce, baldcypress, green ash, southern red oak, tuliptree, eastern white pine	Eastern cottonwood, pin oak
216G:					
Stookey	---	American plum, gray dogwood	Washington hawthorn, eastern redbud, eastern redcedar	Green ash, northern red oak	Eastern white pine
267A:					
Caseyville	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
267B:					
Caseyville	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
423A:					
Millstadt	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
437B:					
Redbud	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
438B:					
Aviston	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
438C2:					
Aviston	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
477B:					
Winfield	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas-fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
477C2:					
Winfield	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas-fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
491B:					
Ruma	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
491C2:					
Ruma	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
491D3:					
Ruma	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
515C3:					
Bunkum	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas-fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
515D3:					
Bunkum	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas-fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
517A:					
Marine	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
517B:					
Marine	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
582B: Homen	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas-fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
582B2: Homen	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
582C2: Homen	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas-fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
657A: Burksville	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
658F:					
Sonsac	American cranberrybush	Southern arrowwood	Washington hawthorn, common hackberry, eastern redcedar, osageorange, Austrian pine	Eastern white pine, pin oak	---
801D:					
Orthents, silty	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Eastern redcedar, shadbush, witchhazel	Norway spruce, baldcypress, eastern white pine, green ash, southern red oak	Eastern cottonwood, pin oak
802D:					
Orthents, loamy	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, eastern white pine, pin oak
878C3:					
Coulterville	Common juniper	Common winterberry, eastern redcedar, hazelnut, prairie crabapple, shadbush	Eastern white pine, green ash	Douglas-fir, black locust, blue spruce	---
Grantfork	Common juniper	Common winterberry, eastern redcedar, hazelnut, prairie crabapple, shadbush	Eastern white pine, green ash	Douglas-fir, black locust, blue spruce	---
880B2:					
Coulterville	Common juniper	American hazelnut, common serviceberry, common winterberry, eastern redcedar, prairie crabapple	Douglas-fir, blue spruce, eastern white pine, green ash	---	---
Darmstadt	Common juniper	American hazelnut, common serviceberry, common winterberry, eastern redcedar, prairie crabapple	Douglas-fir, blue spruce, eastern white pine, green ash	---	---

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
882A:					
Oconee	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	Blackhaw, hazelnut, nannyberry, prairie crabapple, shadbush	Washington hawthorn, baldcypress, eastern redcedar, green ash	Norway spruce, eastern white pine, pin oak	Eastern cottonwood
Darmstadt	Common juniper	Common winterberry, eastern redcedar, hazelnut, prairie crabapple, shadbush	Eastern white pine, green ash	Douglas-fir, black locust, blue spruce	---
Coulterville	Common juniper	Common winterberry, eastern redcedar, hazelnut, prairie crabapple, shadbush	Eastern white pine, green ash	Douglas-fir, black locust, blue spruce	---
882B:					
Oconee	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas-fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
Coulterville	Common juniper	American hazelnut, common serviceberry, common winterberry, eastern redcedar, prairie crabapple	Douglas-fir, blue spruce, eastern white pine, green ash	---	---
Darmstadt	Common juniper	American hazelnut, common serviceberry, common winterberry, eastern redcedar, prairie crabapple	Douglas-fir, blue spruce, eastern white pine, green ash	---	---

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
884B2:					
Bunkum	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
Coulterville	Common juniper	Common winterberry, eastern redcedar, hazelnut, prairie crabapple, shadbush	Eastern white pine, green ash	Douglas-fir, black locust, blue spruce	---
884C3:					
Bunkum	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
Coulterville	Common juniper	Common winterberry, eastern redcedar, hazelnut, prairie crabapple, shadbush	Eastern white pine, green ash	Douglas-fir, black locust, blue spruce	---
886F:					
Ruma	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
Ursa	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	Washington hawthorn, blackhaw, hazelnut, nannyberry, prairie crabapple, shadbush	Baldcypress, eastern redcedar, green ash	Norway spruce, eastern white pine, pin oak	Eastern cottonwood
886F3:					
Ruma	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
886F3:					
Ursa	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	Washington hawthorn, blackhaw, hazelnut, nannyberry, prairie crabapple, shadbush	Baldcypress, eastern redcedar, green ash	Norway spruce, eastern white pine, pin oak	Eastern cottonwood
897D3:					
Bunkum	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas-fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
Atlas	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
907D3:					
Redbud	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash, tuliptree	Eastern cottonwood, eastern white pine, pin oak
Colp	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	Washington hawthorn, blackhaw, hazelnut, nannyberry, prairie crabapple, shadbush	Baldcypress, eastern redcedar, green ash	Norway spruce, eastern white pine, pin oak	Eastern cottonwood

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
988F:					
Westmore	---	---	Washington hawthorn, eastern redcedar, green ash	Eastern white pine, pin oak	---
Neotoma	---	---	Washington hawthorn, eastern redcedar, green ash	Eastern white pine, pin oak	---
993A:					
Cowden	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern whitecedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
Piasa	Common juniper	American hazelnut, common serviceberry, common winterberry, eastern redcedar, prairie crabapple	Douglas-fir, blue spruce, eastern white pine, green ash	---	---
1071A:					
Darwin, undrained	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush	Norway spruce, baldcypress, eastern white pine, green ash, southern red oak	Eastern cottonwood, pin oak
1457A:					
Booker, undrained	American plum, redosier dogwood, silky dogwood	---	Washington hawthorn, blue spruce, common hackberry	Green ash, silver maple	Eastern cottonwood, pin oak
1591A:					
Fults, undrained	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush	Norway spruce, baldcypress, green ash, southern red oak, eastern white pine	Eastern cottonwood, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3092B:					
Sarpy	---	---	Washington hawthorn, nannyberry, eastern redcedar, green ash	---	Eastern cottonwood
3226A:					
Wirt	Common winterberry, coralberry, silky dogwood	American plum, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
3288L:					
Petrolia	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush	Norway spruce, baldcypress, green ash, southern red oak, eastern white pine	Eastern cottonwood, pin oak
3333A:					
Wakeland	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas-fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3333L:					
Wakeland	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
3334L:					
Birds	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush	Norway spruce, baldcypress, green ash, southern red oak, eastern white pine	Eastern cottonwood, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3336A:					
Wilbur	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
3391A:					
Blake	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, nannyberry, southern red oak, eastern redcedar, green ash	Norway spruce, baldcypress, common hackberry	Eastern white pine, pin oak, eastern cottonwood
3394B:					
Haynie	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, nannyberry, southern red oak, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern white pine, pin oak, eastern cottonwood
5079B:					
Menfro, karst	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Nannyberry, shadbush, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, pin oak, eastern white pine
5079C:					
Menfro, karst	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Nannyberry, shadbush, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, pin oak, eastern white pine
5079D:					
Menfro, karst	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Nannyberry, shadbush, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, pin oak, eastern white pine

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
5079G:					
Menfro, karst	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Nannyberry, shadbush, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, pin oak, eastern white pine
5491C:					
Ruma, karst	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
5491D:					
Ruma, karst	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
5491G:					
Ruma, karst	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
5582B:					
Homen, karst	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
5582C:					
Homen, karst	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
7430A:					
Raddle	---	American plum	Washington hawthorn	Norway spruce	Eastern white pine, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8038B:					
Rocher	---	Blackhaw	Washington hawthorn, nannyberry, eastern redcedar, green ash	Common hackberry, honeylocust	---
8070A:					
Beaucoup	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush	Norway spruce, baldcypress, green ash, southern red oak, eastern white pine	Eastern cottonwood, pin oak
8071L:					
Darwin	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush	Baldcypress, green ash, southern red oak, Norway spruce, eastern white pine	Eastern cottonwood, pin oak
8078A:					
Arenzville	Common winterberry, coralberry, silky dogwood	American plum, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Norway spruce, baldcypress, common hackberry, green ash	Eastern cottonwood, eastern white pine, pin oak
8084A:					
Okaw	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush	Norway spruce, baldcypress, eastern white pine, green ash, southern red oak	Eastern cottonwood, pin oak
8122B:					
Colp	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	Blackhaw, hazelnut, nannyberry, prairie crabapple, shadbush	Washington hawthorn, baldcypress, eastern redcedar, green ash	Norway spruce, eastern white pine, pin oak	Eastern cottonwood
8122C:					
Colp	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	Blackhaw, hazelnut, nannyberry, prairie crabapple, shadbush	Washington hawthorn, baldcypress, eastern redcedar, green ash	Norway spruce, eastern white pine, pin oak	Eastern cottonwood

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8180A:					
Dupo	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
8183A:					
Shaffton	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
8284A:					
Tice	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
8302A:					
Ambraw	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush	Norway spruce, baldcypress, green ash, southern red oak, eastern white pine	Eastern cottonwood, pin oak
8304B:					
Landes	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
8333A:					
Wakeland	Silky dogwood	American cranberrybush	Washington hawthorn, blue spruce, white fir	Norway spruce	Pin oak, eastern white pine

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8336A: Wilbur	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
8338B: Hurst	American plum, black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	Blackhaw, hazelnut, nannyberry, prairie crabapple, shadbush	Washington hawthorn, baldcypress, eastern redcedar, green ash	Norway spruce, eastern white pine, pin oak	Eastern cottonwood
8394B: Haynie	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, nannyberry, southern red oak, eastern redcedar	Norway spruce, baldcypress, common hackberry, green ash	Eastern white pine, pin oak, eastern cottonwood
8436B: Meadowbank	Common winterberry, coralberry, gray dogwood, mapleleaf arrowwood, redosier dogwood	American plum, blackhaw, hazelnut, prairie crabapple, roughleaf dogwood	Eastern redcedar, nannyberry, shadbush	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
8457L: Booker	American plum, redosier dogwood, silky dogwood	---	Washington hawthorn, blue spruce, Austrian pine, common hackberry	Green ash, silver maple	Eastern cottonwood, pin oak
8591A: Fults	Black chokeberry, coralberry, gray dogwood, mapleleaf arrowwood	American plum, blackhaw, nannyberry, prairie crabapple, roughleaf dogwood	Common hackberry, eastern redcedar, shadbush	Norway spruce, baldcypress, green ash, southern red oak, eastern white pine	Eastern cottonwood, pin oak

Table 11.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8592A:					
Nameoki	Black chokeberry, common winterberry, coralberry, mapleleaf arrowwood, silky dogwood	American plum, blackhaw, prairie crabapple, shadbush	Washington hawthorn, eastern redcedar, nannyberry, southern red oak	Baldcypress, common hackberry, green ash, Norway spruce	Eastern cottonwood, pin oak, eastern white pine
8787A:					
Banlic	American plum, silky dogwood	---	Washington hawthorn, eastern redcedar, green ash	Eastern white pine, pin oak	---

Table 12.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for further explanation of ratings in this table)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
7D3:					
Atlas	Very limited: restricted permeability, depth to saturated zone, slope.	Very limited: restricted permeability, slope, depth to saturated zone.	Very limited: slope, restricted permeability, depth to saturated zone.	Somewhat limited: depth to saturated zone.	Somewhat limited: slope, depth to saturated zone.
8F2:					
Hickory	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.
30F:					
Hamburg	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.
31A:					
Pierron	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: ponding, restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.
46A:					
Herrick	Somewhat limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
50A:					
Virden	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: depth to saturated zone, ponding.	Very limited: ponding, depth to saturated zone.
75B:					
Drury	Not limited	Not limited	Somewhat limited: slope.	Not limited	Not limited.
75C:					
Drury	Not limited	Not limited	Very limited: slope.	Not limited	Not limited.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
75D:					
Drury	Somewhat limited: slope.	Somewhat limited: slope.	Very limited: slope.	Not limited	Somewhat limited: slope.
75F:					
Drury	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.
79B:					
Menfro	Not limited	Not limited	Somewhat limited: slope.	Not limited	Not limited.
79C2:					
Menfro	Not limited	Not limited	Very limited: slope.	Not limited	Not limited.
79D3:					
Menfro	Somewhat limited: slope.	Somewhat limited: slope.	Very limited: slope.	Not limited	Somewhat limited: slope.
79F:					
Menfro	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.
79F3:					
Menfro	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.
90A:					
Bethalto	Very limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.	Very limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
109A:					
Racoon	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: depth to saturated zone, ponding.	Very limited: ponding, depth to saturated zone.
123:					
Riverwash	Not rated	Not rated	Not rated	Not rated	Not rated.
216G:					
Stookey	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
267A:					
Caseyville	Very limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.	Very limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
267B:					
Caseyville	Very limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.	Very limited: depth to saturated zone, slope.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
423A:					
Millstadt	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
437B:					
Redbud	Somewhat limited: restricted permeability.	Somewhat limited: restricted permeability.	Somewhat limited: slope, restricted permeability.	Not limited	Not limited.
438B:					
Aviston	Not limited	Not limited	Somewhat limited: slope.	Not limited	Not limited.
438C2:					
Aviston	Not limited	Not limited	Very limited: slope.	Not limited	Not limited.
477B:					
Winfield	Not limited	Not limited	Somewhat limited: slope.	Not limited	Not limited.
477C2:					
Winfield	Not limited	Not limited	Very limited: slope.	Not limited	Not limited.
491B:					
Ruma	Not limited	Not limited	Somewhat limited: slope.	Not limited	Not limited.
491C2:					
Ruma	Not limited	Not limited	Very limited: slope.	Not limited	Not limited.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
491D3:					
Ruma	Somewhat limited: slope.	Somewhat limited: slope.	Very limited: slope.	Not limited	Somewhat limited: slope.
515C3:					
Bunkum	Somewhat limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone, restricted permeability.	Very limited: slope, depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
515D3:					
Bunkum	Somewhat limited: depth to saturated zone, slope, restricted permeability.	Somewhat limited: slope, depth to saturated zone, restricted permeability.	Very limited: slope, depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: slope, depth to saturated zone.
517A:					
Marine	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
517B:					
Marine	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability, slope.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
582B:					
Homen	Somewhat limited: restricted permeability.	Somewhat limited: restricted permeability.	Somewhat limited: slope, restricted permeability.	Not limited	Not limited.
582B2:					
Homen	Somewhat limited: restricted permeability.	Somewhat limited: restricted permeability.	Somewhat limited: slope, restricted permeability.	Not limited	Not limited.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
582C2:					
Homen	Somewhat limited: restricted permeability.	Somewhat limited: restricted permeability.	Very limited: slope, restricted permeability.	Not limited	Not limited.
657A:					
Burksville	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: depth to saturated zone, ponding.	Very limited: ponding, depth to saturated zone.
658F:					
Sonsac	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability, content of large stones, depth to bedrock, gravel content.	Very limited: slope.	Very limited: slope, droughty, content of large stones, depth to bedrock.
785G:					
Lacrescent	Very limited: slope, content of large stones.	Very limited: slope, content of large stones.	Very limited: slope, content of large stones, gravel content.	Very limited: slope, content of large stones.	Very limited: slope, content of large stones.
801D:					
Orthents, silty	Very limited: slope, depth to saturated zone.	Very limited: slope, depth to saturated zone.	Very limited: slope, depth to saturated zone.	Somewhat limited: slope.	Very limited: slope, depth to saturated zone.
802D:					
Orthents, loamy	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Somewhat limited: slope.	Very limited: slope.
864:					
Pits, quarries	Not rated	Not rated	Not rated	Not rated	Not rated.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
878C3:					
Coulterville	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: slope, depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
Grantfork	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone, restricted permeability.	Very limited: slope, depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
880B2:					
Coulterville	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability, slope.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
Darmstadt	Very limited: sodium content, restricted permeability, depth to saturated zone.	Very limited: sodium content, restricted permeability, depth to saturated zone.	Very limited: sodium content, restricted permeability, depth to saturated zone, slope.	Somewhat limited: depth to saturated zone.	Very limited: sodium content, depth to saturated zone.
882A:					
Oconee	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
Darmstadt	Very limited: sodium content, restricted permeability, depth to saturated zone.	Very limited: sodium content, restricted permeability, depth to saturated zone.	Very limited: sodium content, restricted permeability, depth to saturated zone.	Somewhat limited: depth to saturated zone.	Very limited: sodium content, depth to saturated zone.
Coulterville	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
882B:					
Oconee	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability, slope.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
Coulterville	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability, slope.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
Darmstadt	Very limited: sodium content, restricted permeability, depth to saturated zone.	Very limited: sodium content, restricted permeability, depth to saturated zone.	Very limited: sodium content, restricted permeability, depth to saturated zone, slope.	Somewhat limited: depth to saturated zone.	Very limited: sodium content, depth to saturated zone.
884B2:					
Bunkum	Somewhat limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone, slope, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
Coulterville	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability, slope.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
884C3:					
Bunkum	Somewhat limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone, restricted permeability.	Very limited: slope, depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.
Coulterville	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: slope, depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
886F:					
Ruma	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.
Ursa	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Very limited: slope.	Very limited: slope.
886F3:					
Ruma	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.
Ursa	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Very limited: slope.	Very limited: slope.
897D3:					
Bunkum	Somewhat limited: depth to saturated zone, slope, restricted permeability.	Somewhat limited: slope, depth to saturated zone, restricted permeability.	Very limited: slope, depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone.	Somewhat limited: slope, depth to saturated zone.
Atlas	Very limited: restricted permeability, depth to saturated zone, slope.	Very limited: restricted permeability, slope, depth to saturated zone.	Very limited: slope, restricted permeability, depth to saturated zone.	Somewhat limited: depth to saturated zone.	Somewhat limited: slope, depth to saturated zone.
907D3:					
Redbud	Somewhat limited: slope, restricted permeability.	Somewhat limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Not limited	Somewhat limited: slope.
Colp	Somewhat limited: slope, restricted permeability, depth to saturated zone.	Somewhat limited: slope, restricted permeability, depth to saturated zone.	Very limited: slope, restricted permeability, depth to saturated zone.	Somewhat limited: depth to saturated zone.	Somewhat limited: slope, depth to saturated zone.
988F:					
Westmore	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Very limited: slope.	Very limited: slope.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
988F:					
Neotoma	Very limited: slope, gravel content.	Very limited: slope, gravel content.	Very limited: slope, gravel content, content of large stones.	Very limited: slope.	Very limited: slope, content of large stones, gravel content.
993A:					
Cowden	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, ponding, restricted permeability.	Very limited: depth to saturated zone, ponding.	Very limited: ponding, depth to saturated zone.
Piasa	Very limited: depth to saturated zone, sodium content, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone, sodium content, restricted permeability.	Very limited: depth to saturated zone, sodium content, ponding, restricted permeability.	Very limited: depth to saturated zone, ponding.	Very limited: ponding, sodium content, depth to saturated zone.
1071A:					
Darwin, undrained	Very limited: depth to saturated zone, flooding, ponding, restricted permeability, too clayey.	Very limited: ponding, depth to saturated zone, restricted permeability, too clayey, flooding.	Very limited: depth to saturated zone, flooding, ponding, restricted permeability, too clayey.	Very limited: depth to saturated zone, ponding, too clayey, flooding.	Very limited: ponding, flooding, depth to saturated zone, too clayey.
1457A:					
Booker, undrained	Very limited: depth to saturated zone, flooding, ponding, too clayey, restricted permeability.	Very limited: too clayey, ponding, depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, too clayey, ponding, restricted permeability, flooding.	Very limited: depth to saturated zone, too clayey, ponding.	Very limited: too clayey, ponding, depth to saturated zone, flooding.
1591A:					
Fults, undrained	Very limited: depth to saturated zone, flooding, ponding, restricted permeability, too clayey.	Very limited: ponding, depth to saturated zone, restricted permeability, too clayey.	Very limited: depth to saturated zone, ponding, restricted permeability, too clayey, flooding.	Very limited: depth to saturated zone, ponding, too clayey.	Very limited: ponding, depth to saturated zone, too clayey, flooding.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
3092B:					
Sarpy	Very limited: flooding, too sandy.	Very limited: too sandy, flooding.	Very limited: too sandy, flooding, slope.	Very limited: too sandy, flooding.	Very limited: flooding, droughty.
3226A:					
Wirt	Very limited: flooding.	Somewhat limited: flooding.	Very limited: flooding.	Somewhat limited: flooding.	Very limited: flooding.
3288L:					
Petrolia	Very limited: depth to saturated zone, flooding, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone, flooding, restricted permeability.	Very limited: depth to saturated zone, flooding, ponding, restricted permeability.	Very limited: depth to saturated zone, ponding, flooding.	Very limited: ponding, flooding, depth to saturated zone.
3333A:					
Wakeland	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Very limited: flooding, depth to saturated zone.
3333L:					
Wakeland	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Very limited: flooding, depth to saturated zone.
3334L:					
Birds	Very limited: depth to saturated zone, flooding, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone, flooding, restricted permeability.	Very limited: depth to saturated zone, flooding, ponding, restricted permeability.	Very limited: depth to saturated zone, ponding, flooding.	Very limited: ponding, flooding, depth to saturated zone.
3336A:					
Wilbur	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Very limited: flooding, depth to saturated zone.	Somewhat limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.
3391A:					
Blake	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Very limited: flooding, depth to saturated zone.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
3394B:					
Haynie	Very limited: flooding.	Somewhat limited: flooding.	Very limited: flooding, slope.	Somewhat limited: flooding.	Very limited: flooding.
3646A:					
Fluvaquents, loamy	Very limited: depth to saturated zone, flooding, ponding.	Very limited: ponding, depth to saturated zone, flooding.	Very limited: depth to saturated zone, flooding, ponding.	Very limited: depth to saturated zone, ponding, flooding.	Very limited: ponding, flooding, depth to saturated zone.
3847L:					
Fluvaquents	Very limited: depth to saturated zone, flooding, ponding.	Very limited: ponding, depth to saturated zone, flooding.	Very limited: depth to saturated zone, flooding, ponding.	Very limited: depth to saturated zone, ponding, flooding.	Very limited: ponding, flooding, depth to saturated zone.
Orthents	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Very limited: slope, restricted permeability.	Somewhat limited: slope.	Very limited: slope.
5079B:					
Menfro, karst	Not limited	Not limited	Somewhat limited: slope.	Not limited	Not limited.
5079C:					
Menfro, karst	Not limited	Not limited	Very limited: slope.	Not limited	Not limited.
5079D:					
Menfro, karst	Very limited: slope.	Very limited: slope.	Very limited: slope.	Somewhat limited: slope.	Very limited: slope.
5079G:					
Menfro, karst	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.
5491C:					
Ruma, karst	Somewhat limited: slope.	Somewhat limited: slope.	Very limited: slope.	Not limited	Somewhat limited: slope.
5491D:					
Ruma, karst	Very limited: slope.	Very limited: slope.	Very limited: slope.	Somewhat limited: slope.	Very limited: slope.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
5491G:					
Ruma, karst	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.	Very limited: slope.
5582B:					
Homen, karst	Somewhat limited: restricted permeability.	Somewhat limited: restricted permeability.	Somewhat limited: slope, restricted permeability.	Not limited	Not limited.
5582C:					
Homen, karst	Somewhat limited: restricted permeability, slope.	Somewhat limited: restricted permeability, slope.	Very limited: slope, restricted permeability.	Not limited	Somewhat limited: slope.
7430A:					
Raddle	Very limited: flooding.	Not limited	Not limited	Not limited	Not limited.
8038B:					
Rocher	Very limited: flooding.	Not limited	Somewhat limited: flooding, slope.	Not limited	Somewhat limited: flooding.
8070A:					
Beaucoup	Very limited: depth to saturated zone, flooding, ponding.	Very limited: ponding, depth to saturated zone.	Very limited: depth to saturated zone, ponding, flooding.	Very limited: depth to saturated zone, ponding.	Very limited: ponding, depth to saturated zone, flooding.
8071L:					
Darwin	Very limited: depth to saturated zone, flooding, ponding, restricted permeability, too clayey.	Very limited: ponding, depth to saturated zone, restricted permeability, too clayey.	Very limited: depth to saturated zone, ponding, restricted permeability, too clayey, flooding.	Very limited: depth to saturated zone, ponding, too clayey.	Very limited: ponding, depth to saturated zone, too clayey, flooding.
8078A:					
Arenzville	Very limited: flooding.	Not limited	Somewhat limited: flooding.	Not limited	Somewhat limited: flooding.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
8084A:					
Okaw----------------	Very limited: depth to saturated zone, flooding, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, ponding, restricted permeability, flooding.	Very limited: depth to saturated zone, ponding.	Very limited: ponding, depth to saturated zone, flooding.
8122B:					
Colp----------------	Very limited: flooding, restricted permeability, depth to saturated zone.	Somewhat limited: restricted permeability, depth to saturated zone.	Somewhat limited: restricted permeability, depth to saturated zone, flooding, slope.	Somewhat limited: depth to saturated zone.	Somewhat limited: flooding, depth to saturated zone.
8122C:					
Colp----------------	Very limited: flooding, restricted permeability, depth to saturated zone.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: slope, restricted permeability, depth to saturated zone, flooding.	Somewhat limited: depth to saturated zone.	Somewhat limited: flooding, depth to saturated zone.
8180A:					
Dupo----------------	Very limited: flooding, depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability, flooding.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.
8183A:					
Shaffton------------	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.
8284A:					
Tice----------------	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
8302A:					
Ambraw	Very limited: depth to saturated zone, flooding, ponding, restricted permeability.	Very limited: ponding, depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, ponding, flooding, restricted permeability.	Very limited: depth to saturated zone, ponding.	Very limited: ponding, depth to saturated zone, flooding.
8304B:					
Landes	Very limited: flooding.	Not limited	Somewhat limited: flooding, slope, gravel content.	Not limited	Somewhat limited: flooding.
8333A:					
Wakeland	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone.	Very limited: depth to saturated zone, flooding.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.
8336A:					
Wilbur	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.	Somewhat limited: depth to saturated zone.	Somewhat limited: flooding, depth to saturated zone.
8338B:					
Hurst	Very limited: flooding, restricted permeability, depth to saturated zone.	Very limited: restricted permeability, depth to saturated zone.	Very limited: restricted permeability, depth to saturated zone, flooding, slope.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.
8394B:					
Haynie	Very limited: flooding.	Not limited	Somewhat limited: flooding, slope.	Not limited	Somewhat limited: flooding.
8436B:					
Meadowbank	Very limited: flooding.	Not limited	Somewhat limited: flooding, slope.	Not limited	Somewhat limited: flooding.
8457L:					
Booker	Very limited: depth to saturated zone, flooding, ponding, too clayey, restricted permeability.	Very limited: too clayey, ponding, depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, too clayey, ponding, restricted permeability, flooding.	Very limited: depth to saturated zone, too clayey, ponding.	Very limited: too clayey, ponding, depth to saturated zone, flooding.

Table 12.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
8591A:					
Fults	Very limited: depth to saturated zone, flooding, ponding, restricted permeability, too clayey.	Very limited: ponding, depth to saturated zone, restricted permeability, too clayey.	Very limited: depth to saturated zone, ponding, restricted permeability, too clayey, flooding.	Very limited: depth to saturated zone, ponding, too clayey.	Very limited: ponding, depth to saturated zone, too clayey, flooding.
8592A:					
Nameoki	Very limited: flooding, restricted permeability, too clayey, depth to saturated zone.	Very limited: restricted permeability, too clayey, depth to saturated zone.	Very limited: restricted permeability, too clayey, depth to saturated zone, flooding.	Very limited: too clayey, depth to saturated zone.	Very limited: too clayey, depth to saturated zone, flooding.
8787A:					
Banlic	Very limited: flooding, depth to saturated zone, restricted permeability.	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, restricted permeability, flooding.	Somewhat limited: depth to saturated zone.	Somewhat limited: depth to saturated zone, flooding.
8812F:					
Typic Hapludalfs	Very limited: slope, flooding.	Very limited: slope.	Very limited: slope, flooding.	Very limited: slope.	Very limited: slope, flooding.

Table 13.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
7D3:										
Atlas-------------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
8F2:										
Hickory-----------	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
30F:										
Hamburg-----------	Very poor.	Poor	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
31A:										
Pierron-----------	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Fair	Good.
46A:										
Herrick-----------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
50A:										
Virden------------	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
75B:										
Drury-------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
75C:										
Drury-------------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
75D:										
Drury-------------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
75F:										
Drury-------------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
79B:										
Menfro------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
79C2:										
Menfro------------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
79D3:										
Menfro------------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
79F:										
Menfro------------	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
79F3:										
Menfro------------	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
90A:										
Bethalto----------	Poor	Poor	Poor	Poor	Poor	Fair	Fair	Good	Good	Fair.

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
109A:										
Racoon	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
123.										
Riverwash										
216G:										
Stookey	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
267A:										
Caseyville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
267B:										
Caseyville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
423A:										
Millstadt	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
437B:										
Redbud	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
438B:										
Aviston	Fair	Fair	Fair	Poor	Fair	Poor	Poor	Good	Good	Poor.
438C2:										
Aviston	Fair	Fair	Fair	Poor	Fair	Poor	Poor	Good	Good	Poor.
477B:										
Winfield	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
477C2:										
Winfield	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
491B:										
Ruma	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
491C2:										
Ruma	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
491D3:										
Ruma	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
515C3:										
Bunkum	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
515D3:										
Bunkum	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
517A:										
Marine	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
517B:										
Marine	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
582B:										
Homen	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
582B2:										
Homen	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
582C2:										
Homen	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
657A:										
Burksville	Poor	Fair	Poor	Fair	Fair	Good	Good	Poor	Fair	Good.
658F:										
Sonsac	Very poor.	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
785G:										
Lacrescent	Poor	Poor	Fair	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
801D:										
Orthents, silty	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
802D:										
Orthents, loamy	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
864.										
Pits, quarries										
878C3:										
Coulterville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Grantfork	Fair	Good	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
880B2:										
Coulterville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Darmstadt	Fair	Good	Poor	Good	Good	Fair	Poor	Fair	Good	Poor.
882A:										
Oconee	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Darmstadt	Fair	Good	Poor	Good	Good	Fair	Fair	Fair	Good	Fair.
Coulterville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
882B:										
Oconee	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Coulterville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Darmstadt	Fair	Good	Poor	Good	Good	Fair	Poor	Fair	Good	Poor.

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
884B2:										
Bunkum	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Coulterville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
884C3:										
Bunkum	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Coulterville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
886F:										
Ruma	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Ursa	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
886F3:										
Ruma	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Ursa	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
897D3:										
Bunkum	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Atlas	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
907D3:										
Redbud	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Colp	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
988F:										
Westmore	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Neotoma	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
993A:										
Cowden	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
Piasa	Poor	Fair	Fair	Poor	Poor	Good	Good	Poor	Poor	Good.
1071A:										
Darwin, undrained	Poor	Poor	Fair	Poor	Poor	Good	Good	Poor	Poor	Good.
1457A:										
Booker, undrained	Poor	Poor	Fair	Poor	Poor	Good	Good	Poor	Poor	Good.
1591A:										
Fults, undrained	Poor	Poor	Fair	Poor	Poor	Good	Good	Fair	Fair	Good.

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
3092B:										
Sarpy	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
3226A:										
Wirt	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
3288L:										
Petrolia	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3333A:										
Wakeland	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
3333L:										
Wakeland	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
3334L:										
Birds	Good	Fair	Good	Good	Fair	Good	Good	Good	Good	Good.
3336A:										
Wilbur	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
3391A:										
Blake	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good.
3394B:										
Haynie	Fair	Fair	Fair	Good	Poor	Poor	Poor	Fair	Fair	Poor.
3646A:										
Fluvaquents, loamy	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
3847L:										
Fluvaquents	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
Orthents	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
5079B:										
Menfro, karst	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
5079C:										
Menfro, karst	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
5079D:										
Menfro, karst	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
5079G:										
Menfro, karst	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
5491C:										
Ruma, karst	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
5491D:										
Ruma, karst	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
5491G:										
Ruma, karst	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
5582B:										
Homen, karst	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
5582C:										
Homen, karst	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
7430A:										
Raddle	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
8038B:										
Rocher	Good	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
8070A:										
Beaucoup	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good.
8071L:										
Darwin	Poor	Poor	Fair	Poor	Poor	Good	Good	Poor	Poor	Good.
8078A:										
Arenzville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
8084A:										
Okaw	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
8122B:										
Colp	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
8122C:										
Colp	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
8180A:										
Dupo	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
8183A:										
Shaffton	Good	Good	Good	Good	Fair	Good	Good	Good	Good	Good.
8284A:										
Tice	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
8302A:										
Ambraw	Good	Fair	Good	Good	Fair	Good	Good	Good	Good	Good.
8304B:										
Landes	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
8333A:										
Wakeland	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
8336A:										
Wilbur	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

Table 13.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
8338B:										
Hurst	Fair	Good	Good	Good	Fair	Poor	Very poor.	Good	Good	Very poor.
8394B:										
Haynie	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
8436B:										
Meadowbank	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
8457L:										
Booker	Poor	Poor	Fair	Poor	Poor	Fair	Good	Poor	Poor	Fair.
8591A:										
Fults	Fair	Fair	Poor	Fair	Fair	Good	Fair	Fair	Fair	Fair.
8592A:										
Nameoki	Fair	Good	Fair	Good	Good	Poor	Good	Fair	Good	Fair.
8787A:										
Banlic	Fair	Good	Good	Good	Good	Fair	Good	Good	Good	Fair.
8812F:										
Typic Hapludalfs	Poor	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.

Table 14.--Hydric Soils

(See text for definitions of hydric qualities)

Map symbol and map unit name	Component	Hydric status	Local landform
7D3:			
Atlas silty clay loam, 10 to 18 percent slopes, severely eroded	Atlas	No	ground moraine
8F2:			
Hickory silt loam, 18 to 35 percent slopes, eroded	Hickory	No	ground moraine
30F:			
Hamburg silt loam, 18 to 35 percent slopes	Hamburg	No	loess bluff
31A:			
Pierron silt loam, 0 to 2 percent slopes	Pierron	Yes	ground moraine, depression
46A:			
Herrick silt loam, 0 to 2 percent slopes	Herrick	No	ground moraine
	Virden	Yes	depression
	Piasa	Yes	depression
	Cowden	Yes	depression
50A:			
Virden silt loam, 0 to 2 percent slopes	Virden	Yes	ground moraine
75B:			
Drury silt loam, 2 to 5 percent slopes	Drury	No	loess bluff
75C:			
Drury silt loam, 5 to 10 percent slopes	Drury	No	alluvial fan, loess bluff
75D:			
Drury silt loam, 10 to 18 percent slopes	Drury	No	loess bluff
75F:			
Drury silt loam, 18 to 35 percent slopes	Drury	No	loess bluff
79B:			
Menfro silt loam, 2 to 5 percent slopes	Menfro	No	loess hill
79C2:			
Menfro silt loam, 5 to 10 percent slopes, eroded	Menfro	No	loess hill

Table 14.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
79D3:			
Menfro silty clay loam, 10 to 18 percent slopes, severely eroded	Menfro	No	loess hill
79F:			
Menfro silt loam, 18 to 35 percent slopes	Menfro	No	loess hill
79F3:			
Menfro silty clay loam, 18 to 35 percent slopes, severely eroded	Menfro	No	loess hill
90A:			
Bethalto silt loam, 0 to 2 percent slopes	Bethalto	No	ground moraine
	Virden	Yes	depression
109A:			
Racoon silt loam, 0 to 2 percent slopes	Racoon	Yes	ground moraine
123:			
Riverwash	Riverwash	Yes	flood plain
216G:			
Stookey silt loam, 35 to 70 percent slopes	Stookey	No	loess bluff
267A:			
Caseyville silt loam, 0 to 2 percent slopes	Caseyville	No	ground moraine
267B:			
Caseyville silt loam, 2 to 5 percent slopes	Caseyville	No	ground moraine
423A:			
Millstadt silt loam, 0 to 2 percent slopes	Millstadt	No	lake terrace
437B:			
Redbud silt loam, 2 to 5 percent slopes	Redbud	No	lake terrace
438B:			
Aviston silt loam, 2 to 5 percent slopes	Aviston	No	ground moraine
	Virden	Yes	depression
438C2:			
Aviston silt loam, 5 to 10 percent slopes, eroded	Aviston	No	ground moraine
	Virden	Yes	depression
477B:			
Winfield silt loam, 2 to 5 percent slopes	Winfield	No	loess hill, ground moraine

Table 14.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
477C2: Winfield silt loam, 5 to 10 percent slopes, eroded	Winfield	No	loess hill, ground moraine
491B: Ruma silt loam, 2 to 5 percent slopes	Ruma	No	ground moraine
491C2: Ruma silt loam, 5 to 10 percent slopes, eroded	Ruma	No	ground moraine
491D3: Ruma silty clay loam, 10 to 18 percent slopes, severely eroded	Ruma	No	ground moraine
515C3: Bunkum silty clay loam, 5 to 10 percent slopes, severely eroded	Bunkum	No	ground moraine
515D3: Bunkum silty clay loam, 10 to 18 percent slopes, severely eroded	Bunkum	No	ground moraine
517A: Marine silt loam, 0 to 2 percent slopes	Marine	No	ground moraine
	Pierron	Yes	depression
517B: Marine silt loam, 2 to 5 percent slopes	Marine	No	ground moraine
	Pierron	Yes	depression
582B: Homen silt loam, 2 to 5 percent slopes	Homen	No	ground moraine
582B2: Homen silt loam, 2 to 5 percent slopes, eroded	Homen	No	ground moraine
582C2: Homen silt loam, 5 to 10 percent slopes, eroded	Homen	No	ground moraine
657A: Burksville silt loam, 0 to 2 percent slopes	Burksville	Yes	ground moraine
	Pierron	Yes	ground moraine, depression

Table 14.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
658F:			
Sonsac flaggy silt loam, 18 to 35 percent slopes	Sonsac	No	hillslope
785G:			
Lacrescent flaggy silt loam, 35 to 70 percent slopes	Lacrescent	No	bluff
801D:			
Orthents, silty, steep	Orthents, silty	No	till plain
802D:			
Orthents, loamy, steep	Orthents, loamy	No	flood plain
864.			
Pits, quarries			
878C3:			
Coulterville-Grantfork silty clay loams, 5 to 10 percent slopes, severely eroded	Coulterville	No	ground moraine
	Grantfork	No	ground moraine
880B2:			
Coulterville-Darmstadt silt loams, 2 to 5 percent slopes, eroded	Coulterville	No	ground moraine
	Darmstadt	No	ground moraine
882A:			
Oconee-Darmstadt-Coulterville silt loams, 0 to 2 percent slopes	Oconee	No	ground moraine
	Darmstadt	No	ground moraine
	Coulterville	No	ground moraine
	Burksville	Yes	ground moraine
	Piasa	Yes	depression
	Cowden	Yes	depression
882B:			
Oconee-Coulterville-Darmstadt silt loams, 2 to 5 percent slopes	Oconee	No	ground moraine
	Coulterville	No	ground moraine
	Darmstadt	No	ground moraine
	Burksville	Yes	ground moraine
	Piasa	Yes	depression
	Cowden	Yes	depression

Table 14.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
884B2:			
Bunkum-Coulterville silt loams, 2 to 5 percent slopes, eroded	Bunkum	No	ground moraine
	Coulterville	No	ground moraine
884C3:			
Bunkum-Coulterville silty clay loams, 5 to 10 percent slopes, severely eroded	Bunkum	No	ground moraine
	Coulterville	No	ground moraine
886F:			
Ruma-Ursa silt loams, 18 to 35 percent slopes	Ruma	No	ground moraine
	Ursa	No	ground moraine
886F3:			
Ruma-Ursa silty clay loams, 18 to 35 percent slopes, severely eroded	Ruma	No	ground moraine
	Ursa	No	ground moraine
897D3:			
Bunkum-Atlas silty clay loams, 10 to 18 percent slopes, severely eroded	Bunkum	No	ground moraine
	Atlas	No	ground moraine
907D3:			
Redbud-Colp silty clay loams, 10 to 18 percent slopes, severely eroded	Redbud	No	lake terrace
	Colp	No	lake terrace
988F:			
Westmore-Neotoma complex, 18 to 35 percent slopes	Westmore	No	hillslope
	Neotoma	No	hillslope
993A:			
Cowden-Piasa silt loams, 0 to 2 percent slopes	Cowden	Yes	ground moraine, depression
	Piasa	Yes	ground moraine, depression
1071A:			
Darwin silty clay, undrained, 0 to 2 percent slopes, occasionally flooded	Darwin, undrained	Yes	flood plain

Table 14.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
1457A: Booker clay, undrained, 0 to 2 percent slopes, occasionally flooded	Booker, undrained	Yes	flood plain
1591A: Fults silty clay, undrained, 0 to 2 percent slopes, occasionally flooded	Fults, undrained	Yes	flood plain
3092B: Sarpy fine sand, 2 to 5 percent slopes, frequently flooded	Sarpy	No	flood plain
3226A: Wirt silt loam, 0 to 2 percent slopes, frequently flooded	Wirt	No	flood plain
3288L: Petrolia silty clay loam, 0 to 2 percent slopes, frequently flooded, long duration	Petrolia	Yes	flood plain
3333A: Wakeland silt loam, 0 to 2 percent slopes, frequently flooded	Wakeland	No	flood plain
	Birds	Yes	flood plain
3333L: Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, long duration	Wakeland	Yes	flood plain
	Birds	Yes	flood plain
3334L: Birds silt loam, 0 to 2 percent slopes, frequently flooded, long duration	Birds	Yes	flood plain
3336A: Wilbur silt loam, 0 to 2 percent slopes, frequently flooded	Wilbur	No	flood plain
	Birds	Yes	flood plain
3391A: Blake silty clay loam, 0 to 2 percent slopes, frequently flooded	Blake	No	flood plain
	Fluvaquents, loamy	Yes	flood plain

Table 14.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
3394B:			
Haynie silt loam, 2 to 5 percent slopes, frequently flooded	Haynie	No	flood plain
	Fluvaquents, loamy	Yes	flood plain
3646A:			
Fluvaquents, loamy, 0 to 2 percent slopes, frequently flooded	Fluvaquents, loamy	Yes	flood plain
3847L:			
Fluvaquents-Orthents complex, frequently flooded, long duration	Fluvaquents	Yes	flood plain
	Orthents	No	levee
5079B:			
Menfro silt loam, karst, 2 to 5 percent slopes, eroded	Menfro, karst	No	loess hill, sinkhole
5079C:			
Menfro silt loam, karst, 5 to 12 percent slopes, severely eroded	Menfro, karst	No	loess hill, sinkhole
5079D:			
Menfro silt loam, karst, 12 to 25 percent slopes, severely eroded	Menfro, karst	No	loess hill, sinkhole
5079G:			
Menfro silt loam, karst, 25 to 60 percent slopes	Menfro, karst	No	loess hill, sinkhole
5491C:			
Ruma silty clay loam, karst, 5 to 12 percent slopes, severely eroded	Ruma, karst	No	ground moraine, sinkhole
5491D:			
Ruma silty clay loam, karst, 12 to 25 percent slopes, severely eroded	Ruma, karst	No	ground moraine, sinkhole
5491G:			
Ruma silt loam, karst, 25 to 60 percent slopes	Ruma, karst	No	ground moraine, sinkhole
5582B:			
Homen silt loam, karst, 2 to 5 percent slopes	Homen, karst	No	ground moraine, sinkhole

Table 14.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
5582C:			
Homen silt loam, karst, 5 to 12 percent slopes, eroded	Homen, karst	No	ground moraine, sinkhole
7430A:			
Raddle silt loam, 0 to 2 percent slopes, rarely flooded	Raddle	No	alluvial fan
8038B:			
Rocher loam, 2 to 5 percent slopes, occasionally flooded	Rocher	No	flood plain
	Ambraw	Yes	flood plain
8070A:			
Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded	Beaucoup	Yes	flood plain
8071L:			
Darwin silty clay, 0 to 2 percent slopes, occasionally flooded, long duration	Darwin	Yes	flood plain
8078A:			
Arenzville silt loam, 0 to 2 percent slopes, occasionally flooded	Arenzville	No	flood plain
8084A:			
Okaw silt loam, 0 to 2 percent slopes, occasionally flooded	Okaw	Yes	lake plain
8122B:			
Colp silt loam, 2 to 5 percent slopes, occasionally flooded	Colp	No	lake plain
	Okaw	Yes	lake plain
8122C:			
Colp silty clay loam, 5 to 10 percent slopes, severely eroded, occasionally flooded	Colp	No	lake plain
	Okaw	Yes	lake plain
8180A:			
Dupo silt loam, 0 to 2 percent slopes, occasionally flooded	Dupo	No	flood plain
	Birds	Yes	flood plain

Table 14.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
8183A:			
Shaffton clay loam, 0 to 2 percent slopes, occasionally flooded	Shaffton	No	flood plain
	Fults	Yes	flood plain
	Ambraw	Yes	flood plain
8284A:			
Tice silty clay loam, 0 to 2 percent slopes, occasionally flooded	Tice	No	flood plain
	Beaucoup	Yes	flood plain
	Ambraw	Yes	flood plain
8302A:			
Ambraw silty clay loam, 0 to 2 percent slopes, occasionally flooded	Ambraw	Yes	flood plain
8304B:			
Landes very fine sandy loam, 2 to 5 percent slopes, occasionally flooded	Landes	No	flood plain
	Fults	Yes	flood plain
8333A:			
Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded	Wakeland	No	flood plain
	Birds	Yes	flood plain
8336A:			
Wilbur silt loam, 0 to 2 percent slopes, occasionally flooded	Wilbur	No	flood plain
8338B:			
Hurst silt loam, 2 to 5 percent slopes, occasionally flooded	Hurst	No	lake plain
	Okaw	Yes	lake plain
8394B:			
Haynie silt loam, 2 to 5 percent slopes, occasionally flooded	Haynie	No	flood plain
8436B:			
Meadowbank silt loam, 2 to 5 percent slopes, occasionally flooded	Meadowbank	No	flood plain
8457L:			
Booker clay, 0 to 2 percent slopes, occasionally flooded, long duration	Booker	Yes	flood plain

Table 14.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
8591A:			
Fults silty clay, 0 to 2 percent slopes, occasionally flooded	Fults	Yes	flood plain
8592A:			
Nameoki silty clay, 0 to 2 percent slopes, occasionally flooded	Nameoki	No	flood plain
	Fults	Yes	flood plain
	Ambraw	Yes	flood plain
8787A:			
Banlic silt loam, 0 to 2 percent slopes, occasionally flooded	Banlic	No	terrace
	Birds	Yes	flood plain
8812F:			
Typic Hapludalfs, 18 to 35 percent slopes, occasionally flooded	Typic Hapludalfs	No	escarpment
	Birds	Yes	flood plain

Table 15a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:						
Atlas	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Slope	0.96	Slope	0.96	Depth to saturated zone	1.00
8F2:						
Hickory	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
30F:						
Hamburg	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
31A:						
Pierron	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
46A:						
Herrick	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
50A:						
Virden	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
75B:						
Drury	Not limited		Not limited		Not limited	
75C:						
Drury	Not limited		Not limited		Somewhat limited:	
					Slope	0.97
75D:						
Drury	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope	0.96	Slope	0.96	Slope	1.00
75F:						
Drury	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
79B:						
Menfro	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
79C2:						
Menfro	Somewhat limited:		Somewhat limited:		Very limited:	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
					Shrink-swell	0.50
79D3:						
Menfro	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
79F:						
Menfro	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
79F3:						
Menfro	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
90A:						
Bethalto	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
109A:						
Racoon	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
123:						
Riverwash	Not rated		Not rated		Not rated	
216G:						
Stookey	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
267A:						
Caseyville	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
267B:						
Caseyville	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
423A:						
Millstadt	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
437B:						
Redbud	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
438B:						
Aviston	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
438C2:						
Aviston	Somewhat limited:		Somewhat limited:		Very limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	1.00
					Shrink-swell	0.50
			Shrink-swell	0.50		
477B:						
Winfield	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
477C2:						
Winfield	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
					Shrink-swell	0.50
			Shrink-swell	0.50		
491B:						
Ruma	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
491C2:						
Ruma	Somewhat limited:		Somewhat limited:		Very limited:	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
			Depth to saturated zone	0.15	Shrink-swell	0.50
491D3:						
Ruma	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
515C3:						
Bunkum	Somewhat limited:		Very limited:		Somewhat limited:	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
515D3:						
Bunkum	Somewhat limited:		Very limited:		Very limited:	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Slope	1.00
					Depth to saturated zone	0.98
	Slope	0.96	Slope	0.96		
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
517A:						
Marine	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	0.50	Depth to saturated zone	1.00
517B:						
Marine	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	0.50	Depth to saturated zone	1.00
582B:						
Homen	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
582B2:						
Homen	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
582C2:						
Homen	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
			Shrink-swell	0.50	Shrink-swell	0.50
657A:						
Burksville	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
658F:						
Sonsac	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Depth to hard bedrock	0.42	Depth to hard bedrock	1.00	Depth to hard bedrock	0.42
	Content of large stones	0.10	Content of large stones	0.10	Content of large stones	0.10
785G:						
Lacrescent	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
801D:						
Orthents, silty	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.07	Shrink-swell	0.50	Depth to saturated zone	0.07

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
802D:						
Orthents, loamy---	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.24		
864:						
Pits, quarries----	Not rated		Not rated		Not rated	
878C3:						
Coulterville------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
					Shrink-swell	0.50
Grantfork---------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	1.00
880B2:						
Coulterville------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Darmstadt---------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
882A:						
Oconee------------	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
Darmstadt---------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Coulterville------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
882B:						
Oconee------------	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
Coulterville------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
882B:						
Darmstadt---------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
884B2:						
Bunkum------------	Somewhat limited:		Very limited:		Somewhat limited:	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Coulterville------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
884C3:						
Bunkum------------	Somewhat limited:		Very limited:		Very limited:	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.98
					Shrink-swell	0.50
Coulterville------	Very limited:		Very limited:		Very limited:	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
					Shrink-swell	0.50
886F:						
Ruma--------------	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
Ursa--------------	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
			Depth to saturated zone	0.15		
886F3:						
Ruma--------------	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
Ursa--------------	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
			Depth to saturated zone	0.15		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
897D3:						
Bunkum------------	Somewhat limited:		Very limited:		Very limited:	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.96	Slope	0.96	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Atlas-------------	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Slope	0.96	Slope	0.96	Depth to	1.00
					Depth to saturated zone	1.00
907D3:						
Redbud------------	Somewhat limited:		Very limited:		Very limited:	
	Slope	0.96	Shrink-swell	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Slope	0.96		
Colp--------------	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
	Slope	0.96	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.81	Slope	0.96	Depth to saturated zone	0.81
988F:						
Westmore----------	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
			Depth to hard bedrock	0.61		
Neotoma-----------	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.59	Content of large stones	0.59	Content of large stones	0.59
993A:						
Cowden------------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Piasa-------------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
1071A:						
Darwin, undrained	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1457A:						
Booker, undrained	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
1591A:						
Fults, undrained--	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3092B:						
Sarpy-------------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
3226A:						
Wirt--------------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.15		
3288L:						
Petrolia----------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3333A:						
Wakeland----------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
3333L:						
Wakeland----------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
3334L:						
Birds-------------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
3336A:						
Wilbur------------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
3391A:						
Blake-------------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
3394B:						
Haynie------------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.24		
3646A:						
Fluvaquents, loamy	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
3847L:						
Fluvaquents-------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Orthents----------	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.24		
5079B:						
Menfro, karst-----	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
5079C:						
Menfro, karst-----	Somewhat limited:		Somewhat limited:		Very limited:	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
					Shrink-swell	0.50
5079D:						
Menfro, karst-----	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
5079G:						
Menfro, karst-----	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
5491C:						
Ruma, karst-------	Somewhat limited:		Somewhat limited:		Very limited:	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Depth to saturated zone	0.15	Shrink-swell	0.50
			Slope	0.04		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
5491D:						
Ruma, karst	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
5491G:						
Ruma, karst	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
5582B:						
Homen, karst	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
5582C:						
Homen, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	1.00
	Slope	0.04			Shrink-swell	0.50
			Shrink-swell	0.50		
			Slope	0.04		
7430A:						
Raddle	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
8038B:						
Rocher	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
8070A:						
Beaucoup	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8071L:						
Darwin	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
8078A:						
Arenzville	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Shrink-swell	0.50		
			Depth to saturated zone	0.15		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
8084A:						
Okaw	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
8122B:						
Colp	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.81	Depth to saturated zone	1.00	Depth to saturated zone	0.81
8122C:						
Colp	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.81	Depth to saturated zone	1.00	Slope	1.00
					Depth to saturated zone	0.81
8180A:						
Dupo	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Shrink-swell	1.00		
8183A:						
Shaffton	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
8284A:						
Tice	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8302A:						
Ambraw	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
8304B:						
Landes	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
8333A:						
Wakeland	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
8336A:						
Wilbur------------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
8338B:						
Hurst-------------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
8394B:						
Haynie------------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.24		
8436B:						
Meadowbank--------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
8457L:						
Booker------------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
8591A:						
Fults-------------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
8592A:						
Nameoki-----------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
8787A:						
Banlic------------	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
8812F:						
Typic Hapludalfs--	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:						
Atlas	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.96
	Shrink-swell	1.00	Slope	0.96	Depth to saturated zone	0.94
	Slope	0.96	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
8F2:						
Hickory	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
30F:						
Hamburg	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.50		
31A:						
Pierron	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00	Cutbanks cave	0.50		
	Shrink-swell	1.00				
	Depth to saturated zone	1.00				
46A:						
Herrick	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
50A:						
Virden	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
75B:						
Drury	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
75C:						
Drury	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
75D:						
Drury	Very limited:		Somewhat limited:		Somewhat limited:	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
75F:						
Drury	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10		
79B:						
Menfro	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
79C2:						
Menfro	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
79D3:						
Menfro	Very limited:		Somewhat limited:		Somewhat limited:	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
79F:						
Menfro	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
79F3:						
Menfro	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
90A:						
Bethalto	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
	Shrink-swell	0.50				
109A:						
Racoon	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
123:						
Riverwash	Not rated		Not rated		Not rated	
216G:						
Stookey	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.50		
	Shrink-swell	0.50				
267A:						
Caseyville	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
267B:						
Caseyville	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
	Shrink-swell	0.50				
423A:						
Millstadt	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
	Shrink-swell	0.50				
437B:						
Redbud	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Cutbanks cave	0.10		
438B:						
Aviston	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Cutbanks cave	0.10		
438C2:						
Aviston	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Cutbanks cave	0.10		
477B:						
Winfield	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
477C2:						
Winfield	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
491B:						
Ruma	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Shrink-swell	0.50	Cutbanks cave	0.10		
491C2:						
Ruma	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Shrink-swell	0.50	Cutbanks cave	0.10		
491D3:						
Ruma	Very limited:		Somewhat limited:		Somewhat limited:	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to saturated zone	0.15		
	Shrink-swell	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
515C3:						
Bunkum------------	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
515D3:						
Bunkum------------	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96	Depth to saturated zone	0.75
	Slope	0.96	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
517A:						
Marine------------	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.50		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
517B:						
Marine------------	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.50		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
582B:						
Homen-------------	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
582B2:						
Homen-------------	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Cutbanks cave	0.10		
582C2:						
Homen-------------	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
657A:						
Burksville--------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
658F:						
Sonsac	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Shrink-swell	1.00			Droughty	0.64
	Depth to hard bedrock	0.42	Slope	1.00	Content of large stones	0.54
			Too clayey	0.50		
	Content of large stones	0.10	Content of large stones	0.10	Depth to bedrock	0.42
			Cutbanks cave	0.10		
785G:						
Lacrescent	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
	Frost action	0.50	Cutbanks cave	0.10		
801D:						
Orthents, silty	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00			Depth to saturated zone	0.03
	Shrink-swell	0.50	Slope	1.00		
	Depth to saturated zone	0.03	Cutbanks cave	0.10		
802D:						
Orthents, loamy	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.24		
	Frost action	0.50				
			Cutbanks cave	0.10		
864:						
Pits, quarries	Not rated		Not rated		Not rated	
878C3:						
Coulterville	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Depth to saturated zone	0.94				
			Cutbanks cave	0.10		
	Shrink-swell	0.50	Too clayey	0.02		
Grantfork	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Depth to saturated zone	0.94				
			Cutbanks cave	0.10		
880B2:						
Coulterville	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00				
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
	Shrink-swell	0.50				
Darmstadt	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Sodium content	1.00
	Low strength	1.00			Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
882A:						
Oconee	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
Darmstadt	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Sodium content	1.00
	Low strength	1.00	Cutbanks cave	0.10	Depth to saturated zone	0.94
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
Coulterville	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
882B:						
Oconee	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
Coulterville	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
Darmstadt	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Sodium content	1.00
	Low strength	1.00	Cutbanks cave	0.10	Depth to saturated zone	0.94
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
884B2:						
Bunkum	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Shrink-swell	0.50				
Coulterville	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
884C3:						
Bunkum	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Shrink-swell	0.50				
Coulterville	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
	Shrink-swell	0.50				
886F:						
Ruma	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	0.15		
	Shrink-swell	0.50	Cutbanks cave	0.10		
Ursa	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	1.00	Depth to saturated zone	0.15		
	Frost action	0.50	Too clayey	0.12		
			Cutbanks cave	0.10		
886F3:						
Ruma	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	0.15		
	Shrink-swell	0.50	Cutbanks cave	0.10		
Ursa	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	1.00	Depth to saturated zone	0.15		
	Frost action	0.50	Too clayey	0.12		
			Cutbanks cave	0.10		
897D3:						
Bunkum	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96	Depth to saturated zone	0.75
	Slope	0.96	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
Atlas	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96	Depth to saturated zone	0.94
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Slope	0.96	Too clayey	0.02		
	Depth to saturated zone	0.94				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
907D3:						
Redbud	Very limited:		Somewhat limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.96
	Slope	0.96	Slope	0.96		
	Shrink-swell	0.50	Cutbanks cave	0.10		
Colp	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.96
	Shrink-swell	1.00	Slope	0.96	Depth to saturated zone	0.48
	Slope	0.96	Cutbanks cave	0.10		
	Depth to saturated zone	0.48	Too clayey	0.02		
988F:						
Westmore	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to hard bedrock	0.61		
	Shrink-swell	1.00	Too clayey	0.32		
			Cutbanks cave	0.10		
Neotoma	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.59	Content of large stones	0.59	Content of large stones	0.84
			Cutbanks cave	0.10	Gravel content	0.01
993A:						
Cowden	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	1.00				
Piasa	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Sodium content	1.00
	Frost action	1.00	Cutbanks cave	0.10	Depth to saturated zone	1.00
	Low strength	1.00				
	Shrink-swell	1.00				
1071A:						
Darwin, undrained	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Too clayey	0.68	Too clayey	1.00
	Frost action	0.50	Cutbanks cave	0.10		
1457A:						
Booker, undrained	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Too clayey	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Frost action	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1591A:						
Fults, undrained	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Too clayey	1.00
	Flooding	1.00	Too clayey	0.88	Flooding	0.60
	Shrink-swell	0.50	Flooding	0.60		
3092B:						
Sarpy	Very limited:		Very limited:		Very limited:	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
			Flooding	0.80	Droughty	0.69
3226A:						
Wirt	Very limited:		Somewhat limited:		Very limited:	
	Flooding	1.00	Flooding	0.80	Flooding	1.00
	Frost action	0.50	Depth to saturated zone	0.15		
			Cutbanks cave	0.10		
3288L:						
Petrolia	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
3333A:						
Wakeland	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
3333L:						
Wakeland	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
3334L:						
Birds	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
3336A:						
Wilbur	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.43
	Depth to saturated zone	0.43	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
3391A:						
Blake	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.94
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
	Shrink-swell	0.50				
3394B:						
Haynie	Very limited:		Somewhat limited:		Very limited:	
	Frost action	1.00	Flooding	0.80	Flooding	1.00
	Flooding	1.00	Depth to saturated zone	0.24		
			Cutbanks cave	0.10		
3646A:						
Fluvaquents, loamy	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
3847L:						
Fluvaquents	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
Orthents	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.24		
	Frost action	0.50	Cutbanks cave	0.10		
5079B:						
Menfro, karst	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
5079C:						
Menfro, karst	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
5079D:						
Menfro, karst	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
5079G:						
Menfro, karst	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
5491C:						
Ruma, karst-------	Very limited:		Somewhat limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	0.15	Slope	0.04
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Slope	0.04				
5491D:						
Ruma, karst-------	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	0.15		
	Shrink-swell	0.50	Cutbanks cave	0.10		
5491G:						
Ruma, karst-------	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	0.15		
	Shrink-swell	0.50	Cutbanks cave	0.10		
5582B:						
Homen, karst------	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Cutbanks cave	0.10		
5582C:						
Homen, karst------	Very limited:		Somewhat limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.04
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Slope	0.04	Slope	0.04		
7430A:						
Raddle------------	Very limited:		Somewhat limited:		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Flooding	0.40				
8038B:						
Rocher------------	Very limited:		Very limited:		Somewhat limited:	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
	Frost action	0.50	Flooding	0.60		
8070A:						
Beaucoup----------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
8071L:						
Darwin------------	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Too clayey	0.68	Too clayey	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Frost action	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
8078A:						
Arenzville	Very limited:		Somewhat limited:		Somewhat limited:	
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Depth to saturated zone	0.15		
			Cutbanks cave	0.10		
8084A:						
Okaw	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Too clayey	0.50		
	Shrink-swell	1.00	Cutbanks cave	0.10		
8122B:						
Colp	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
	Flooding	1.00	Flooding	0.60	Depth to saturated zone	0.48
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.48	Too clayey	0.02		
8122C:						
Colp	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
	Flooding	1.00	Flooding	0.60	Depth to saturated zone	0.48
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.48	Too clayey	0.02		
8180A:						
Dupo	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	0.94	Cutbanks cave	0.50		
			Too clayey	0.12		
8183A:						
Shaffton	Very limited:		Very limited:		Somewhat limited:	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	1.00	Flooding	0.60
	Frost action	0.50	Flooding	0.60		
8284A:						
Tice	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
8302A:						
Ambraw------------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
8304B:						
Landes------------	Very limited:		Very limited:		Somewhat limited:	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
	Frost action	0.50	Flooding	0.60		
8333A:						
Wakeland----------	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	0.94	Cutbanks cave	0.10		
8336A:						
Wilbur------------	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
	Flooding	1.00	Flooding	0.60	Depth to saturated zone	0.43
	Depth to saturated zone	0.43	Cutbanks cave	0.10		
8338B:						
Hurst-------------	Very limited:		Very limited:		Somewhat limited:	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	0.75	Too clayey	0.12		
	Frost action	0.50	Cutbanks cave	0.10		
8394B:						
Haynie------------	Very limited:		Somewhat limited:		Somewhat limited:	
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Depth to saturated zone	0.24		
			Cutbanks cave	0.10		
8436B:						
Meadowbank--------	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Cutbanks cave	1.00	Flooding	0.60
	Flooding	1.00	Flooding	0.60		
	Shrink-swell	0.50				
8457L:						
Booker------------	Very limited:		Very limited:		Very limited:	
	Shrink-swell	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Too clayey	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Frost action	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
8591A:						
Fults-------------	Very limited:		Very limited:		Very limited:	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Too clayey	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Shrink-swell	1.00	Too clayey	0.32		
8592A:						
Nameoki-----------	Very limited:		Very limited:		Very limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	0.75	Too clayey	0.32		
8787A:						
Banlic------------	Very limited:		Very limited:		Somewhat limited:	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	0.94	Cutbanks cave	0.50		
8812F:						
Typic Hapludalfs--	Very limited:		Very limited:		Very limited:	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 16.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for further explanation of ratings in this table)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
7D3:					
Atlas	Very limited: restricted permeability, depth to saturated zone, slope.	Very limited: slope, depth to saturated zone.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, hard to compact, slope, too clayey.
8F2:					
Hickory	Very limited: slope, restricted permeability.	Very limited: slope, seepage.	Very limited: slope, too clayey.	Very limited: slope.	Very limited: slope, too clayey.
30F:					
Hamburg	Very limited: slope, restricted permeability.	Very limited: slope, seepage.	Very limited: slope.	Very limited: slope.	Very limited: slope.
31A:					
Pierron	Very limited: restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.	Very limited: depth to saturated zone, ponding, too clayey.	Very limited: ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, hard to compact, too clayey.
46A:					
Herrick	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: hard to compact, depth to saturated zone, too clayey.
50A:					
Virden	Very limited: ponding, depth to saturated zone, restricted permeability.	Very limited: ponding, depth to saturated zone.	Very limited: depth to saturated zone, ponding, too clayey.	Very limited: ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, hard to compact, too clayey.
75B:					
Drury	Somewhat limited: restricted permeability.	Somewhat limited: seepage, slope.	Not limited	Not limited	Not limited.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
75C:					
Drury	Somewhat limited: restricted permeability.	Very limited: slope, seepage.	Not limited	Not limited	Not limited.
75D:					
Drury	Somewhat limited: slope, restricted permeability.	Very limited: slope, seepage.	Somewhat limited: slope.	Somewhat limited: slope.	Somewhat limited: slope.
75F:					
Drury	Very limited: slope, restricted permeability.	Very limited: slope, seepage.	Very limited: slope.	Very limited: slope.	Very limited: slope.
79B:					
Menfro	Somewhat limited: restricted permeability.	Somewhat limited: seepage, slope.	Somewhat limited: too clayey.	Not limited	Somewhat limited: too clayey.
79C2:					
Menfro	Somewhat limited: restricted permeability.	Very limited: slope, seepage.	Somewhat limited: too clayey.	Not limited	Somewhat limited: too clayey.
79D3:					
Menfro	Somewhat limited: slope, restricted permeability.	Very limited: slope, seepage.	Somewhat limited: slope, too clayey.	Somewhat limited: slope.	Somewhat limited: slope, too clayey.
79F:					
Menfro	Very limited: slope, restricted permeability.	Very limited: slope, seepage.	Very limited: slope, too clayey.	Very limited: slope.	Very limited: slope, too clayey.
79F3:					
Menfro	Very limited: slope, restricted permeability.	Very limited: slope, seepage.	Very limited: slope, too clayey.	Very limited: slope.	Very limited: slope, too clayey.
90A:					
Bethalto	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, seepage.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
109A:					
Racoon	Very limited: restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.	Very limited: depth to saturated zone, ponding.	Very limited: ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.
123:					
Riverwash	Not rated	Not rated	Not rated	Not rated	Not rated.
216G:					
Stookey	Very limited: slope, restricted permeability.	Very limited: slope, seepage.	Very limited: slope.	Very limited: slope.	Very limited: slope.
267A:					
Caseyville	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, seepage.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
267B:					
Caseyville	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, seepage, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
423A:					
Millstadt	Very limited: restricted permeability, depth to saturated zone.	Somewhat limited: seepage.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
437B:					
Redbud	Very limited: restricted permeability, depth to saturated zone.	Somewhat limited: depth to saturated zone, seepage, slope.	Somewhat limited: depth to saturated zone, too clayey.	Somewhat limited: depth to saturated zone.	Very limited: hard to compact, too clayey, depth to saturated zone.
438B:					
Aviston	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, seepage, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Somewhat limited: too clayey, depth to saturated zone.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
438C2:					
Aviston	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, slope, seepage.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Somewhat limited: too clayey, depth to saturated zone.
477B:					
Winfield	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, seepage, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Somewhat limited: too clayey, depth to saturated zone.
477C2:					
Winfield	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, slope, seepage.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Somewhat limited: too clayey, depth to saturated zone.
491B:					
Ruma	Somewhat limited: restricted permeability, depth to saturated zone.	Somewhat limited: seepage, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Somewhat limited: too clayey.
491C2:					
Ruma	Somewhat limited: restricted permeability, depth to saturated zone.	Very limited: slope, seepage.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Somewhat limited: too clayey.
491D3:					
Ruma	Somewhat limited: slope, restricted permeability, depth to saturated zone.	Very limited: slope, seepage.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: depth to saturated zone, slope.	Somewhat limited: slope, too clayey.
515C3:					
Bunkum	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
515D3:					
Bunkum	Very limited: depth to saturated zone, restricted permeability, slope.	Very limited: slope, depth to saturated zone.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, slope, too clayey.
517A:					
Marine	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, seepage.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
517B:					
Marine	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, seepage, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
582B:					
Homen	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, seepage, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Somewhat limited: too clayey, depth to saturated zone.
582B2:					
Homen	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Somewhat limited: too clayey, depth to saturated zone.
582C2:					
Homen	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Somewhat limited: too clayey, depth to saturated zone.
657A:					
Burksville	Very limited: restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.	Very limited: depth to saturated zone, ponding, too clayey.	Very limited: ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
658F:					
Sonsac	Very limited: restricted permeability, depth to bedrock, slope, content of large stones.	Very limited: depth to hard bedrock, slope, content of large stones.	Very limited: slope, depth to bedrock, too clayey, seepage, content of large stones.	Very limited: slope, depth to bedrock.	Very limited: depth to bedrock, slope, too clayey, hard to compact, content of large stones.
785G:					
Lacrescent	Very limited: slope, content of large stones.	Very limited: slope, seepage, content of large stones.	Very limited: slope, seepage, content of large stones.	Very limited: slope, seepage.	Very limited: slope, content of large stones, seepage.
801D:					
Orthents, silty	Very limited: depth to saturated zone, slope, restricted permeability.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, slope.	Very limited: slope, depth to saturated zone.
802D:					
Orthents, loamy	Very limited: restricted permeability, slope, depth to saturated zone.	Very limited: slope, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, slope.	Very limited: slope.
864:					
Pits, quarries	Not rated	Not rated	Not rated	Not rated	Not rated.
878C3:					
Coulterville	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
Grantfork	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
880B2:					
Coulterville--------	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
Darmstadt-----------	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, sodium content.	Very limited: depth to saturated zone.	Very limited: sodium content, depth to saturated zone.
882A:					
Oconee--------------	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
Darmstadt-----------	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, sodium content.	Very limited: depth to saturated zone.	Very limited: sodium content, depth to saturated zone.
Coulterville--------	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
882B:					
Oconee--------------	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: hard to compact, depth to saturated zone, too clayey.
Coulterville--------	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
882B:					
Darmstadt	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, sodium content.	Very limited: depth to saturated zone.	Very limited: sodium content, depth to saturated zone.
884B2:					
Bunkum	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
Coulterville	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
884C3:					
Bunkum	Very limited: depth to saturated zone, restricted permeability.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
Coulterville	Very limited: restricted permeability, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, too clayey.	Very limited: depth to saturated zone.	Very limited: depth to saturated zone, too clayey.
886F:					
Ruma	Very limited: slope, restricted permeability, depth to saturated zone.	Very limited: slope, seepage.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: slope, depth to saturated zone.	Very limited: slope, too clayey.
Ursa	Very limited: restricted permeability, slope, depth to saturated zone.	Very limited: slope.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: slope, depth to saturated zone.	Very limited: slope, too clayey, hard to compact.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
886F3:					
Ruma	Very limited: slope, restricted permeability, depth to saturated zone.	Very limited: slope, seepage.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: slope, depth to saturated zone.	Very limited: slope, too clayey.
Ursa	Very limited: restricted permeability, slope, depth to saturated zone.	Very limited: slope.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: slope, depth to saturated zone.	Very limited: slope, too clayey, hard to compact.
897D3:					
Bunkum	Very limited: depth to saturated zone, restricted permeability, slope.	Very limited: slope, depth to saturated zone.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, slope, too clayey.
Atlas	Very limited: restricted permeability, depth to saturated zone, slope.	Very limited: slope, depth to saturated zone.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, hard to compact, slope, too clayey.
907D3:					
Redbud	Very limited: restricted permeability, depth to saturated zone, slope.	Very limited: slope, depth to saturated zone.	Somewhat limited: slope, depth to saturated zone, too clayey.	Somewhat limited: slope, depth to saturated zone.	Very limited: hard to compact, slope, too clayey, depth to saturated zone.
Colp	Very limited: restricted permeability, depth to saturated zone, slope.	Very limited: slope, depth to saturated zone.	Very limited: depth to saturated zone, too clayey, slope.	Somewhat limited: slope, depth to saturated zone.	Very limited: too clayey, hard to compact, depth to saturated zone, slope.
988F:					
Westmore	Very limited: slope, depth to bedrock.	Very limited: slope, depth to hard bedrock, seepage.	Very limited: slope, depth to bedrock, too clayey.	Very limited: slope, depth to bedrock.	Very limited: slope, too clayey, hard to compact, depth to bedrock.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
988F:					
Neotoma	Very limited: slope, content of large stones, depth to bedrock.	Very limited: slope, seepage, content of large stones.	Very limited: slope, depth to bedrock, seepage, content of large stones.	Very limited: slope, seepage.	Very limited: slope, content of large stones, seepage.
993A:					
Cowden	Very limited: restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.	Very limited: depth to saturated zone, ponding, too clayey.	Very limited: ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, hard to compact, too clayey.
Piasa	Very limited: restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.	Very limited: depth to saturated zone, ponding, sodium content, too clayey.	Very limited: ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, sodium content, hard to compact, too clayey.
1071A:					
Darwin, undrained	Very limited: flooding, restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone, ponding, too clayey.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey, hard to compact.
1457A:					
Booker, undrained	Very limited: flooding, restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone, ponding, too clayey.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey, hard to compact.
1591A:					
Fults, undrained	Very limited: flooding, ponding, depth to saturated zone, restricted permeability.	Very limited: ponding, flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone, ponding, seepage, too clayey.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
3092B:					
Sarpy	Very limited: flooding, filtering capacity.	Very limited: flooding, seepage, slope.	Very limited: flooding, seepage, too sandy.	Very limited: flooding, seepage.	Very limited: seepage, too sandy.
3226A:					
Wirt	Very limited: flooding, restricted permeability, depth to saturated zone.	Very limited: flooding, seepage.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Not limited.
3288L:					
Petrolia	Very limited: flooding, ponding, depth to saturated zone, restricted permeability.	Very limited: ponding, flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone, ponding, too clayey.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey.
3333A:					
Wakeland	Very limited: flooding, depth to saturated zone, restricted permeability.	Very limited: flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Very limited: depth to saturated zone.
3333L:					
Wakeland	Very limited: flooding, depth to saturated zone, restricted permeability.	Very limited: flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Very limited: depth to saturated zone.
3334L:					
Birds	Very limited: flooding, ponding, depth to saturated zone, restricted permeability.	Very limited: ponding, flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone, ponding.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
3336A:					
Wilbur	Very limited: flooding, depth to saturated zone, restricted permeability.	Very limited: flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone.
3391A:					
Blake	Very limited: flooding, depth to saturated zone, restricted permeability.	Very limited: flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Very limited: depth to saturated zone.
3394B:					
Haynie	Very limited: flooding, depth to saturated zone, restricted permeability.	Very limited: flooding, seepage, slope, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Not limited.
3646A:					
Fluvaquents, loamy	Very limited: flooding, ponding, depth to saturated zone, restricted permeability.	Very limited: ponding, flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone, ponding.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.
3847L:					
Fluvaquents	Very limited: flooding, ponding, depth to saturated zone, restricted permeability.	Very limited: ponding, flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone, ponding.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone.
Orthents	Very limited: restricted permeability, slope, depth to saturated zone.	Very limited: slope, depth to saturated zone.	Very limited: depth to saturated zone, slope.	Very limited: depth to saturated zone, slope.	Very limited: slope.
5079B:					
Menfro, karst	Somewhat limited: restricted permeability.	Somewhat limited: seepage, slope.	Somewhat limited: too clayey.	Not limited	Somewhat limited: too clayey.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
5079C:					
Menfro, karst	Somewhat limited: restricted permeability.	Very limited: slope, seepage.	Somewhat limited: too clayey.	Not limited	Somewhat limited: too clayey.
5079D:					
Menfro, karst	Very limited: slope, restricted permeability.	Very limited: slope, seepage.	Very limited: slope, too clayey.	Very limited: slope.	Very limited: slope, too clayey.
5079G:					
Menfro, karst	Very limited: slope, restricted permeability.	Very limited: slope, seepage.	Very limited: slope, too clayey.	Very limited: slope.	Very limited: slope, too clayey.
5491C:					
Ruma, karst	Somewhat limited: restricted permeability, depth to saturated zone, slope.	Very limited: slope, seepage.	Very limited: depth to saturated zone, too clayey, slope.	Very limited: depth to saturated zone, slope.	Somewhat limited: too clayey, slope.
5491D:					
Ruma, karst	Very limited: slope, restricted permeability, depth to saturated zone.	Very limited: slope, seepage.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: depth to saturated zone, slope.	Very limited: slope, too clayey.
5491G:					
Ruma, karst	Very limited: slope, restricted permeability, depth to saturated zone.	Very limited: slope, seepage.	Very limited: depth to saturated zone, slope, too clayey.	Very limited: slope, depth to saturated zone.	Very limited: slope, too clayey.
5582B:					
Homen, karst	Very limited: depth to saturated zone, restricted permeability.	Somewhat limited: depth to saturated zone, seepage, slope.	Somewhat limited: depth to saturated zone, too clayey.	Somewhat limited: depth to saturated zone.	Somewhat limited: too clayey, depth to saturated zone.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
5582C:					
Homen, karst	Very limited: depth to saturated zone, restricted permeability, slope.	Very limited: slope, depth to saturated zone.	Somewhat limited: depth to saturated zone, too clayey, slope.	Somewhat limited: slope, depth to saturated zone.	Somewhat limited: too clayey, depth to saturated zone, slope.
7430A:					
Raddle	Somewhat limited: restricted permeability, flooding.	Somewhat limited: seepage, flooding.	Somewhat limited: flooding.	Somewhat limited: flooding.	Not limited.
8038B:					
Rocher	Very limited: flooding.	Very limited: flooding, seepage, slope.	Very limited: flooding, seepage, too sandy.	Very limited: flooding, seepage.	Somewhat limited: seepage, too sandy.
8070A:					
Beaucoup	Very limited: flooding, ponding, depth to saturated zone, restricted permeability.	Very limited: ponding, flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone, ponding, too clayey.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey.
8071L:					
Darwin	Very limited: flooding, restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone, ponding, too clayey.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey, hard to compact.
8078A:					
Arenzville	Very limited: flooding, restricted permeability, depth to saturated zone.	Very limited: flooding, seepage.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Not limited.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
8084A:					
Okaw	Very limited: flooding, restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone, ponding, too clayey.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey, hard to compact.
8122B:					
Colp	Very limited: flooding, restricted permeability, depth to saturated zone.	Very limited: flooding, slope, depth to saturated zone.	Very limited: flooding, depth to saturated zone, too clayey.	Very limited: flooding, depth to saturated zone.	Very limited: too clayey, hard to compact, depth to saturated zone.
8122C:					
Colp	Very limited: flooding, restricted permeability, depth to saturated zone.	Very limited: flooding, slope, depth to saturated zone.	Very limited: flooding, depth to saturated zone, too clayey.	Very limited: flooding, depth to saturated zone.	Very limited: too clayey, hard to compact, depth to saturated zone.
8180A:					
Dupo	Very limited: flooding, restricted permeability, depth to saturated zone.	Very limited: flooding, seepage.	Very limited: flooding, depth to saturated zone, too clayey.	Very limited: flooding, depth to saturated zone.	Very limited: too clayey, hard to compact, depth to saturated zone.
8183A:					
Shaffton	Very limited: flooding, depth to saturated zone, filtering capacity, restricted permeability.	Very limited: flooding, seepage, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone, seepage.	Very limited: seepage, depth to saturated zone.
8284A:					
Tice	Very limited: flooding, depth to saturated zone, restricted permeability.	Very limited: flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone, too clayey.	Very limited: flooding, depth to saturated zone.	Very limited: hard to compact, depth to saturated zone, too clayey.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
8302A:					
Ambraw	Very limited: flooding, ponding, depth to saturated zone, restricted permeability.	Very limited: ponding, flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone, ponding, too clayey.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey.
8304B:					
Landes	Very limited: flooding, filtering capacity.	Very limited: flooding, seepage, slope.	Very limited: flooding, seepage, too sandy.	Very limited: flooding, seepage.	Very limited: seepage, too sandy.
8333A:					
Wakeland	Very limited: flooding, depth to saturated zone, restricted permeability.	Very limited: flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Very limited: depth to saturated zone.
8336A:					
Wilbur	Very limited: flooding, depth to saturated zone, restricted permeability.	Very limited: flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Somewhat limited: depth to saturated zone.
8338B:					
Hurst	Very limited: flooding, restricted permeability, depth to saturated zone.	Very limited: flooding, slope, depth to saturated zone.	Very limited: flooding, depth to saturated zone, too clayey.	Very limited: flooding, depth to saturated zone.	Very limited: too clayey, hard to compact, depth to saturated zone.
8394B:					
Haynie	Very limited: flooding, depth to saturated zone, restricted permeability.	Very limited: flooding, seepage, slope, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Not limited.

Table 16.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
8436B:					
Meadowbank----------	Very limited: flooding, filtering capacity, restricted permeability.	Very limited: flooding, seepage, slope.	Very limited: flooding, seepage.	Very limited: flooding, seepage.	Very limited: seepage.
8457L:					
Booker--------------	Very limited: flooding, restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone, ponding, too clayey.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey, hard to compact.
8591A:					
Fults---------------	Very limited: flooding, restricted permeability, ponding, depth to saturated zone.	Very limited: ponding, flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone, ponding, too clayey, seepage.	Very limited: flooding, ponding, depth to saturated zone.	Very limited: ponding, depth to saturated zone, too clayey, hard to compact.
8592A:					
Nameoki-------------	Very limited: flooding, restricted permeability, depth to saturated zone.	Very limited: flooding, depth to saturated zone, seepage.	Very limited: flooding, depth to saturated zone, seepage, too clayey.	Very limited: flooding, depth to saturated zone.	Very limited: depth to saturated zone, too clayey, seepage.
8787A:					
Banlic--------------	Very limited: flooding, restricted permeability, depth to saturated zone.	Very limited: flooding.	Very limited: flooding, depth to saturated zone.	Very limited: flooding, depth to saturated zone.	Very limited: depth to saturated zone.
8812F:					
Typic Hapludalfs----	Very limited: flooding, slope.	Very limited: flooding, slope, seepage.	Very limited: flooding, slope, seepage.	Very limited: flooding, slope, seepage.	Very limited: slope, seepage.

Table 17.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
7D3:				
Atlas	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Depth to saturated zone Slope	Fair: Depth to saturated zone Shrink-swell
8F2:				
Hickory	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope Rock fragments Too acid	Poor: Slope Shrink-swell
30F:				
Hamburg	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope Carbonate content	Poor: Slope
31A:				
Pierron	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Depth to saturated zone Too clayey Too acid	Poor: Low strength Depth to saturated zone Shrink-swell
46A:				
Herrick	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Too clayey Depth to saturated zone	Poor: Low strength Depth to saturated zone Shrink-swell
50A:				
Virden	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Depth to saturated zone Too clayey	Poor: Depth to saturated zone Shrink-swell
75B:				
Drury	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Good	Good
75C:				
Drury	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Good	Good
75D:				
Drury	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Slope	Good

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
75F:				
Drury	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Poor: Slope
79B:				
Menfro	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Good	Fair: Shrink-swell
79C2:				
Menfro	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Good	Fair: Shrink-swell
79D3:				
Menfro	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Slope	Fair: Shrink-swell
79F:				
Menfro	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Poor: Slope Shrink-swell
79F3:				
Menfro	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Poor: Slope Shrink-swell
90A:				
Bethalto	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone Shrink-swell
109A:				
Racoon	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Depth to saturated zone	Poor: Depth to saturated zone Shrink-swell
123:				
Riverwash	Not rated	Not rated	Not rated	Not rated
216G:				
Stookey	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Poor: Slope Shrink-swell

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
267A:				
Caseyville	Improbable: Bottom layer not a source; Thickest layer not a source	Improbable: Bottom layer not a source; Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone; Shrink-swell
267B:				
Caseyville	Improbable: Bottom layer not a source; Thickest layer not a source	Improbable: Bottom layer not a source; Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone; Shrink-swell
423A:				
Millstadt	Improbable: Bottom layer not a source; Thickest layer not a source	Improbable: Bottom layer not a source; Thickest layer not a source	Fair: Depth to saturated zone; Too acid	Fair: Depth to saturated zone; Shrink-swell
437B:				
Redbud	Improbable: Bottom layer not a source; Thickest layer not a source	Improbable: Bottom layer not a source; Thickest layer not a source	Fair: Depth to saturated zone	Fair: Shrink-swell; Depth to saturated zone
438B:				
Aviston	Improbable: Bottom layer not a source; Thickest layer not a source	Improbable: Bottom layer not a source; Thickest layer not a source	Fair: Depth to saturated zone	Fair: Shrink-swell; Depth to saturated zone
438C2:				
Aviston	Improbable: Bottom layer not a source; Thickest layer not a source	Improbable: Bottom layer not a source; Thickest layer not a source	Fair: Depth to saturated zone	Fair: Shrink-swell; Depth to saturated zone
477B:				
Winfield	Improbable: Bottom layer not a source; Thickest layer not a source	Improbable: Bottom layer not a source; Thickest layer not a source	Fair: Too clayey; Depth to saturated zone	Poor: Low strength; Shrink-swell; Depth to saturated zone
477C2:				
Winfield	Improbable: Bottom layer not a source; Thickest layer not a source	Improbable: Bottom layer not a source; Thickest layer not a source	Fair: Too clayey; Depth to saturated zone	Poor: Low strength; Shrink-swell; Depth to saturated zone
491B:				
Ruma	Improbable: Bottom layer not a source; Thickest layer not a source	Improbable: Bottom layer not a source; Thickest layer not a source	Good	Fair: Shrink-swell

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
491C2:				
Ruma	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Good	Fair: Shrink-swell
491D3:				
Ruma	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Slope	Fair: Shrink-swell
515C3:				
Bunkum	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Too clayey	Poor: Low strength Depth to saturated zone Shrink-swell
515D3:				
Bunkum	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Slope Depth to saturated zone Too clayey	Poor: Low strength Depth to saturated zone Shrink-swell
517A:				
Marine	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Too clayey Depth to saturated zone Too acid	Poor: Low strength Depth to saturated zone Shrink-swell
517B:				
Marine	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Too clayey Depth to saturated zone Too acid	Poor: Low strength Depth to saturated zone Shrink-swell
582B:				
Homen	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Too clayey Depth to saturated zone	Poor: Low strength Shrink-swell Depth to saturated zone
582B2:				
Homen	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Too acid	Fair: Shrink-swell Depth to saturated zone
582C2:				
Homen	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Too clayey Depth to saturated zone	Poor: Low strength Shrink-swell Depth to saturated zone

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
657A:				
Burksville	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Depth to saturated zone Sodium content Too clayey	Poor: Depth to saturated zone Low strength Shrink-swell
658F:				
Sonsac	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope Too clayey Rock fragments Depth to bedrock	Poor: Depth to bedrock Slope Shrink-swell Cobble content Stone content
785G:				
Lacrescent	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope Hard to reclaim Rock fragments	Poor: Slope Cobble content Stone content
801D:				
Orthents, silty	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope Depth to saturated zone	Fair: Slope Depth to saturated zone Shrink-swell
802D:				
Orthents, loamy	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Fair: Slope Shrink-swell
864:				
Pits, quarries	Not rated	Not rated	Not rated	Not rated
878C3:				
Coulterville	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Sodium content	Fair: Depth to saturated zone Shrink-swell
Grantfork	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Sodium content Too clayey	Fair: Depth to saturated zone
880B2:				
Coulterville	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Sodium content Too clayey	Poor: Low strength Depth to saturated zone Shrink-swell
Darmstadt	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Sodium content Depth to saturated zone Too clayey	Poor: Low strength Depth to saturated zone Shrink-swell

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
882A:				
Oconee	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Too clayey Too acid	Poor: Low strength Depth to saturated zone Shrink-swell
Darmstadt	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Sodium content Depth to saturated zone Too clayey	Poor: Low strength Depth to saturated zone Shrink-swell
Coulterville	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Sodium content	Poor: Low strength Depth to saturated zone Shrink-swell
882B:				
Oconee	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Too clayey	Poor: Low strength Depth to saturated zone Shrink-swell
Coulterville	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Sodium content Too clayey	Poor: Low strength Depth to saturated zone Shrink-swell
Darmstadt	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Sodium content Depth to saturated zone Too clayey	Poor: Low strength Depth to saturated zone Shrink-swell
884B2:				
Bunkum	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone Shrink-swell
Coulterville	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Sodium content	Fair: Depth to saturated zone Shrink-swell
884C3:				
Bunkum	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone Shrink-swell
Coulterville	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Sodium content	Fair: Depth to saturated zone Shrink-swell

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
886F:				
Ruma	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Poor: Slope Shrink-swell
Ursa	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope Too clayey	Poor: Slope Shrink-swell
886F3:				
Ruma	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Poor: Slope Shrink-swell
Ursa	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope Too clayey	Poor: Slope Shrink-swell
897D3:				
Bunkum	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Slope Depth to saturated zone Too clayey	Poor: Low strength Depth to saturated zone Shrink-swell
Atlas	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Too clayey Depth to saturated zone Slope	Poor: Low strength Depth to saturated zone Shrink-swell
907D3:				
Redbud	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Slope Depth to saturated zone	Fair: Shrink-swell Depth to saturated zone
Colp	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Slope Depth to saturated zone Too acid	Fair: Shrink-swell Depth to saturated zone
988F:				
Westmore	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope Too clayey Rock fragments Hard to reclaim	Poor: Slope Shrink-swell Depth to bedrock
Neotoma	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope Rock fragments Hard to reclaim Too acid	Poor: Slope Cobble content Stone content

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
993A:				
Cowden	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Depth to saturated zone Too clayey	Poor: Depth to saturated zone Low strength Shrink-swell
Piasa	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Depth to saturated zone Sodium content Too clayey	Poor: Depth to saturated zone Low strength Shrink-swell
1071A:				
Darwin, undrained	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Depth to saturated zone	Poor: Depth to saturated zone Shrink-swell
1457A:				
Booker, undrained	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Depth to saturated zone	Poor: Depth to saturated zone Shrink-swell
1591A:				
Fults, undrained	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Thickest layer not a source Bottom layer possible source	Poor: Depth to saturated zone	Poor: Depth to saturated zone Shrink-swell
3092B:				
Sarpy	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Bottom layer possible source Thickest layer possible source	Poor: Too sandy	Good
3226A:				
Wirt	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Thickest layer not a source Bottom layer possible source	Good	Good
3288L:				
Petrolia	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Depth to saturated zone Too clayey	Poor: Depth to saturated zone Shrink-swell
3333A:				
Wakeland	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
3333L:				
Wakeland	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone
3334L:				
Birds	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Depth to saturated zone	Poor: Depth to saturated zone
3336A:				
Wilbur	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone
3391A:				
Blake	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Carbonate content	Fair: Depth to saturated zone
3394B:				
Haynie	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Thickest layer not a source Bottom layer possible source	Fair: Carbonate content	Good
3646A:				
Fluvaquents, loamy	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Thickest layer not a source Bottom layer possible source	Poor: Depth to saturated zone	Poor: Depth to saturated zone
3847L:				
Fluvaquents	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Thickest layer not a source Bottom layer possible source	Poor: Depth to saturated zone	Poor: Depth to saturated zone
Orthents	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Fair: Slope Shrink-swell
5079B:				
Menfro, karst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Good	Fair: Shrink-swell

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
5079C:				
Menfro, karst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Good	Fair: Shrink-swell
5079D:				
Menfro, karst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Fair: Slope Shrink-swell
5079G:				
Menfro, karst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Poor: Slope Shrink-swell
5491C:				
Ruma, karst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Slope	Fair: Shrink-swell
5491D:				
Ruma, karst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Fair: Slope Shrink-swell
5491G:				
Ruma, karst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Poor: Slope Shrink-swell
5582B:				
Homen, karst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone Too acid	Fair: Shrink-swell Depth to saturated zone
5582C:				
Homen, karst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Slope Depth to saturated zone Too acid	Fair: Shrink-swell Depth to saturated zone
7430A:				
Raddle	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Good	Good

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
8038B:				
Rocher	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Bottom layer possible source Thickest layer possible source	Poor: Hard to reclaim Carbonate content	Good
8070A:				
Beaucoup	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Depth to saturated zone Too clayey	Poor: Depth to saturated zone Shrink-swell
8071L:				
Darwin	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Depth to saturated zone	Poor: Depth to saturated zone Shrink-swell
8078A:				
Arenzville	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Good	Good
8084A:				
Okaw	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Depth to saturated zone	Poor: Depth to saturated zone Shrink-swell
8122B:				
Colp	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Depth to saturated zone	Fair: Shrink-swell Depth to saturated zone
8122C:				
Colp	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Depth to saturated zone	Fair: Shrink-swell Depth to saturated zone
8180A:				
Dupo	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone Shrink-swell
8183A:				
Shaffton	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Thickest layer possible source Bottom layer possible source	Fair: Depth to saturated zone Too acid	Fair: Depth to saturated zone Shrink-swell

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
8284A:				
Tice	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone Shrink-swell
8302A:				
Ambraw	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Thickest layer not a source Bottom layer possible source	Poor: Depth to saturated zone	Poor: Depth to saturated zone
8304B:				
Landes	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Thickest layer possible source Bottom layer possible source	Good	Good
8333A:				
Wakeland	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone
8336A:				
Wilbur	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Depth to saturated zone	Fair: Depth to saturated zone
8338B:				
Hurst	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Depth to saturated zone	Fair: Shrink-swell Depth to saturated zone
8394B:				
Haynie	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Thickest layer not a source Bottom layer possible source	Fair: Carbonate content	Good
8436B:				
Meadowbank	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Thickest layer not a source Bottom layer possible source	Fair: Too clayey	Good
8457L:				
Booker	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Too clayey Depth to saturated zone	Poor: Depth to saturated zone Shrink-swell

Table 17.--Construction Materials--Continued

Map symbol and soil name	Potential source of gravel	Potential source of sand	Potential source of topsoil	Potential source of roadfill
8591A:				
Fults	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Thickest layer not a source Bottom layer possible source	Poor: Depth to saturated zone Too clayey	Poor: Depth to saturated zone Shrink-swell
8592A:				
Nameoki	Improbable: Bottom layer not a source Thickest layer not a source	Probable: Thickest layer not a source Bottom layer possible source	Poor: Too clayey Depth to saturated zone	Fair: Depth to saturated zone Shrink-swell
8787A:				
Banlic	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Fair: Hard to reclaim Depth to saturated zone Too acid	Fair: Depth to saturated zone
8812F:				
Typic Hapludalfs	Improbable: Bottom layer not a source Thickest layer not a source	Improbable: Bottom layer not a source Thickest layer not a source	Poor: Slope	Poor: Slope Shrink-swell

Table 18a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:						
Atlas	Somewhat limited:		Very limited:		Very limited:	
	Slope	0.02	Depth to saturated zone	1.00	Slow refill	1.00
					Cutbanks cave	0.10
			Hard to pack	0.54		
8F2:						
Hickory	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.21	Deep to water	1.00
	Slope	0.36				
30F:						
Hamburg	Somewhat limited:		Very limited:		Very limited:	
	Seepage	0.72	Piping	1.00	Deep to water	1.00
	Slope	0.36				
31A:						
Pierron	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Ponding	1.00	Cutbanks cave	0.50
			Depth to saturated zone	1.00	Slow refill	0.28
46A:						
Herrick	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
50A:						
Virden	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
75B:						
Drury	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.88	Deep to water	1.00
75C:						
Drury	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.88	Deep to water	1.00
75D:						
Drury	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.88	Deep to water	1.00
	Slope	0.02				
75F:						
Drury	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.88	Deep to water	1.00
	Slope	0.36				
79B:						
Menfro	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.08	Deep to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
79C2:						
Menfro	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.09	Deep to water	1.00
79D3:						
Menfro	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.07	Deep to water	1.00
	Slope	0.02				
79F:						
Menfro	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.14	Deep to water	1.00
	Slope	0.36				
79F3:						
Menfro	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.07	Deep to water	1.00
	Slope	0.36				
90A:						
Bethalto	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.68		
109A:						
Racoon	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.54		
123:						
Riverwash	Not rated		Not rated		Not rated	
216G:						
Stookey	Very limited:		Somewhat limited:		Very limited:	
	Slope	1.00	Piping	0.94	Deep to water	1.00
	Seepage	0.72				
267A:						
Caseyville	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.69		
267B:						
Caseyville	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.69		
423A:						
Millstadt	Somewhat limited:		Very limited:		Very limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Deep to water	1.00
			Piping	0.12		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
437B:						
Redbud	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.04	Depth to saturated zone	0.68	Deep to water	1.00
			Piping	0.01		
438B:						
Aviston	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Seepage	0.72	Depth to	0.68	Slow refill	0.28
			saturated zone		Deep to water	0.14
			Piping	0.31	Cutbanks cave	0.10
438C2:						
Aviston	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Seepage	0.72	Depth to	0.68	Slow refill	0.28
			saturated zone		Deep to water	0.14
			Piping	0.29	Cutbanks cave	0.10
477B:						
Winfield	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Seepage	0.72	Depth to	0.68	Slow refill	0.28
			saturated zone		Deep to water	0.14
			Piping	0.14	Cutbanks cave	0.10
477C2:						
Winfield	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Seepage	0.72	Depth to	0.68	Slow refill	0.28
			saturated zone		Deep to water	0.14
			Piping	0.45	Cutbanks cave	0.10
491B:						
Ruma	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.40	Deep to water	1.00
491C2:						
Ruma	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.47	Deep to water	1.00
491D3:						
Ruma	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.09	Deep to water	1.00
	Slope	0.02				
515C3:						
Bunkum	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to	1.00	Slow refill	0.96
			saturated zone		Cutbanks cave	0.10
			Piping	0.50		
515D3:						
Bunkum	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to	1.00	Slow refill	0.96
	Slope	0.02	saturated zone		Cutbanks cave	0.10
			Piping	0.50		
517A:						
Marine	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to	1.00	Cutbanks cave	0.50
			saturated zone		Slow refill	0.28

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
517B:						
Marine	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Cutbanks cave	0.50
					Slow refill	0.28
582B:						
Homen	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	0.68	Slow refill	0.96
					Deep to water	0.14
			Piping	0.34	Cutbanks cave	0.10
582B2:						
Homen	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	0.68	Slow refill	0.96
					Deep to water	0.14
			Piping	0.31	Cutbanks cave	0.10
582C2:						
Homen	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	0.68	Slow refill	0.96
					Deep to water	0.14
			Piping	0.30	Cutbanks cave	0.10
657A:						
Burksville	Not limited		Very limited:		Somewhat limited:	
			Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	1.00		
658F:						
Sonsac	Somewhat limited:		Somewhat limited:		Very limited:	
	Depth to bedrock	0.85	Thin layer	0.85	Deep to water	1.00
	Slope	0.36	Content of large stones	0.10		
785G:						
Lacrescent	Very limited:		Very limited:		Very limited:	
	Seepage	1.00	Content of large stones	1.00	Deep to water	1.00
	Slope	1.00				
801D:						
Orthents, silty	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Seepage	0.54	Depth to saturated zone	0.95	Slow refill	0.46
	Slope	0.12			Cutbanks cave	0.10
			Piping	0.88	Deep to water	0.02
802D:						
Orthents, loamy	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Slope	0.12	Piping	0.50	Deep to water	0.99
	Seepage	0.04			Slow refill	0.96
					Cutbanks cave	0.10
864:						
Pits, quarries	Not rated		Not rated		Not rated	
878C3:						
Coulterville	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	1.00		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
878C3:						
Grantfork	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	1.00		
880B2:						
Coulterville	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	1.00		
Darmstadt	Not limited		Very limited:		Very limited:	
			Piping	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
882A:						
Oconee	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
Darmstadt	Not limited		Very limited:		Very limited:	
			Piping	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
Coulterville	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	1.00		
882B:						
Oconee	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
Coulterville	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	1.00		
Darmstadt	Not limited		Very limited:		Very limited:	
			Piping	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
884B2:						
Bunkum	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	0.44		
Coulterville	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	1.00		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
884C3:						
Bunkum	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	0.37		
Coulterville	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Piping	1.00		
886F:						
Ruma	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.28	Deep to water	1.00
	Slope	0.36				
Ursa	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope	0.36	Hard to pack	0.78	Deep to water	1.00
886F3:						
Ruma	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.24	Deep to water	1.00
	Slope	0.36				
Ursa	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope	0.36	Hard to pack	0.91	Deep to water	1.00
897D3:						
Bunkum	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
	Slope	0.02			Cutbanks cave	0.10
			Piping	0.37		
Atlas	Somewhat limited:		Very limited:		Very limited:	
	Slope	0.02	Depth to saturated zone	1.00	Slow refill	1.00
					Cutbanks cave	0.10
			Hard to pack	0.55		
907D3:						
Redbud	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.04	Depth to saturated zone	0.68	Deep to water	1.00
	Slope	0.02				
Colp	Somewhat limited:		Very limited:		Very limited:	
	Slope	0.02	Depth to saturated zone	1.00	Deep to water	1.00
			Hard to pack	0.81		
988F:						
Westmore	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Thin layer	0.16	Deep to water	1.00
	Slope	0.36	Hard to pack	0.05		
	Depth to bedrock	0.16				
Neotoma	Very limited:		Somewhat limited:		Very limited:	
	Seepage	1.00	Content of large stones	0.59	Deep to water	1.00
	Slope	0.36				

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
993A:						
Cowden	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
Piasa	Not limited		Very limited:		Somewhat limited:	
			Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	1.00		
1071A:						
Darwin, undrained	Not limited		Very limited:		Very limited:	
			Ponding	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	1.00		
1457A:						
Booker, undrained	Not limited		Very limited:		Very limited:	
			Ponding	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	1.00		
1591A:						
Fults, undrained	Very limited:		Very limited:		Very limited:	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Seepage	0.08		
3092B:						
Sarpy	Very limited:		Somewhat limited:		Very limited:	
	Seepage	1.00	Seepage	0.90	Deep to water	1.00
3226A:						
Wirt	Somewhat limited:		Very limited:		Very limited:	
	Seepage	0.72	Piping	1.00	Deep to water	1.00
			Seepage	0.01		
3288L:						
Petrolia	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.21		
3333A:						
Wakeland	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Piping	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
3333L:						
Wakeland	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Piping	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
3334L:						
Birds	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to	1.00	Cutbanks cave	0.10
			saturated zone			
			Piping	0.82		
3336A:						
Wilbur	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Depth to	1.00	Slow refill	0.28
			saturated zone		Cutbanks cave	0.10
			Piping	1.00		
3391A:						
Blake	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Depth to	1.00	Slow refill	0.28
			saturated zone		Cutbanks cave	0.10
			Piping	0.61		
3394B:						
Haynie	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Piping	1.00	Deep to water	0.99
			Seepage	0.01	Slow refill	0.28
					Cutbanks cave	0.10
3646A:						
Fluvaquents, loamy	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to	1.00	Cutbanks cave	0.10
			Seepage	0.03		
3847L:						
Fluvaquents	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to	1.00	Cutbanks cave	0.10
			saturated zone			
			Seepage	0.03		
Orthents	Somewhat limited:		Somewhat limited:		Somewhat limited:	
	Slope	0.12	Piping	0.18	Deep to water	0.99
	Seepage	0.04			Slow refill	0.96
					Cutbanks cave	0.10
5079B:						
Menfro, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.09	Deep to water	1.00
5079C:						
Menfro, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.11	Deep to water	1.00
5079D:						
Menfro, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.11	Deep to water	1.00
	Slope	0.10				
5079G:						
Menfro, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope	0.94	Piping	0.14	Deep to water	1.00
	Seepage	0.72				

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
5491C:						
Ruma, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.08	Deep to water	1.00
5491D:						
Ruma, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.08	Deep to water	1.00
	Slope	0.10				
5491G:						
Ruma, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope	0.94	Piping	0.53	Deep to water	1.00
	Seepage	0.72				
5582B:						
Homen, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.04	Depth to saturated zone	0.68	Deep to water	1.00
			Piping	0.34		
5582C:						
Homen, karst	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.04	Depth to saturated zone	0.68	Deep to water	1.00
			Piping	0.31		
7430A:						
Raddle	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.88	Deep to water	1.00
8038B:						
Rocher	Very limited:		Very limited:		Very limited:	
	Seepage	1.00	Piping	1.00	Deep to water	1.00
			Seepage	0.10		
8070A:						
Beaucoup	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.24		
8071L:						
Darwin	Not limited		Very limited:		Very limited:	
			Ponding	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	1.00		
8078A:						
Arenzville	Somewhat limited:		Somewhat limited:		Very limited:	
	Seepage	0.72	Piping	0.94	Deep to water	1.00
8084A:						
Okaw	Not limited		Very limited:		Somewhat limited:	
			Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	0.94		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8122B:						
Colp	Not limited		Very limited:		Very limited:	
			Depth to saturated zone	1.00	Deep to water	1.00
			Hard to pack	0.68		
8122C:						
Colp	Not limited		Very limited:		Very limited:	
			Depth to saturated zone	1.00	Deep to water	1.00
			Hard to pack	0.81		
8180A:						
Dupo	Somewhat limited:		Very limited:		Very limited:	
	Seepage	0.72	Depth to saturated zone	1.00	Deep to water	1.00
			Hard to pack	0.32		
8183A:						
Shaffton	Very limited:		Very limited:		Very limited:	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.94		
			Seepage	0.10		
8284A:						
Tice	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.18		
8302A:						
Ambraw	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.54	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.23		
			Seepage	0.01		
8304B:						
Landes	Very limited:		Somewhat limited:		Very limited:	
	Seepage	1.00	Seepage	0.08	Deep to water	1.00
8333A:						
Wakeland	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Piping	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
8336A:						
Wilbur	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	1.00		
8338B:						
Hurst	Not limited		Very limited:		Very limited:	
			Depth to saturated zone	1.00	Deep to water	1.00
			Hard to pack	0.76		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8394B:						
Haynie	Somewhat limited:		Very limited:		Somewhat limited:	
	Seepage	0.72	Piping	1.00	Deep to water	0.99
			Seepage	0.01	Slow refill	0.28
					Cutbanks cave	0.10
8436B:						
Meadowbank	Very limited:		Somewhat limited:		Very limited:	
	Seepage	1.00	Piping	0.99	Deep to water	1.00
			Seepage	0.10		
8457L:						
Booker	Not limited		Very limited:		Very limited:	
			Ponding	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	1.00		
8591A:						
Fults	Very limited:		Very limited:		Very limited:	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Seepage	0.08		
8592A:						
Nameoki	Very limited:		Very limited:		Very limited:	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Seepage	0.08		
8787A:						
Banlic	Somewhat limited:		Very limited:		Very limited:	
	Seepage	0.04	Piping	1.00	Deep to water	1.00
			Depth to saturated zone	1.00		
8812F:						
Typic Hapludalfs	Very limited:		Not limited		Very limited:	
	Seepage	1.00			Deep to water	1.00
	Slope	0.36				

Table 18b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
7D3:						
Atlas	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	8 to 15% slope	0.96
			K factor <0.35 to >0.20	0.56	Cutbanks cave	0.10
8F2:						
Hickory	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	>15% slope	1.00
			K factor <0.35 to >0.20	0.89	Cutbanks cave	0.10
30F:						
Hamburg	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Cutbanks cave	0.50
31A:						
Pierron	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			Ponded	1.00		
			<36 inches to water table	1.00	Ponding	1.00
					Cutbanks cave	0.50
46A:						
Herrick	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
50A:						
Virden	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Ponding	1.00
			Ponded	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
75B:						
Drury	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.36		
75C:						
Drury	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.99	K factor >0.35	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.99		
75D:						
Drury	Very limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	8 to 15% slope	0.96
			Slope >8%	1.00	Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75F:						
Drury	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Cutbanks cave	0.10
79B:						
Menfro	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.36		
79C2:						
Menfro	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Cutbanks cave	0.10
			Slope >8%	1.00		
79D3:						
Menfro	Very limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	8 to 15% slope	0.96
			Slope >8%	1.00	Cutbanks cave	0.10
79F:						
Menfro	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Cutbanks cave	0.10
79F3:						
Menfro	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Cutbanks cave	0.10
90A:						
Bethalto	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
109A:						
Racoon	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Ponding	1.00
			Ponded	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
123:						
Riverwash	Not rated		Not rated		Not rated	
216G:						
Stookey	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Cutbanks cave	0.50
267A:						
Caseyville	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
267B:						
Caseyville----------	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to	1.00
			<36 inches to	1.00	saturated zone	
			water table		Cutbanks cave	0.10
			Slope >1% but <8%	0.36		
423A:						
Millstadt-----------	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to	1.00
			<36 inches to	1.00	saturated zone	
			water table		Cutbanks cave	0.10
437B:						
Redbud--------------	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to	0.99
			<36 inches to	1.00	saturated zone	
			water table		Cutbanks cave	0.10
			Slope >1% but <8%	0.36		
438B:						
Aviston-------------	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to	0.99
			<36 inches to	1.00	saturated zone	
			water table		Cutbanks cave	0.10
			Slope >1% but <8%	0.36		
438C2:						
Aviston-------------	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to	0.99
			<36 inches to	1.00	saturated zone	
			water table		Cutbanks cave	0.10
			Slope >8%	1.00		
477B:						
Winfield------------	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.25	K factor >0.35	1.00	Depth to	0.99
			<36 inches to	1.00	saturated zone	
			water table		Cutbanks cave	0.10
			Slope >1% but <8%	0.25		
477C2:						
Winfield------------	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.99	K factor >0.35	1.00	Depth to	0.99
			<36 inches to	1.00	saturated zone	
			water table		Cutbanks cave	0.10
			Slope >1% but <8%	0.99		
491B:						
Ruma----------------	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to	0.15
			Slope >1% but <8%	0.36	saturated zone	
					Cutbanks cave	0.10
491C2:						
Ruma----------------	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to	0.15
			Slope >8%	1.00	saturated zone	
					Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
491D3:						
Ruma	Very limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	8 to 15% slope	0.96
			Slope >8%	1.00	Depth to saturated zone	0.15
					Cutbanks cave	0.10
515C3:						
Bunkum	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.99	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.99		
515D3:						
Bunkum	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	1.00
			Slope >8%	1.00		
			<36 inches to water table	1.00	8 to 15% slope	0.96
					Cutbanks cave	0.10
517A:						
Marine	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.50
517B:						
Marine	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.25	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.50
			Slope >1% but <8%	0.25		
582B:						
Homen	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.25	K factor >0.35	1.00	Depth to saturated zone	0.99
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.25		
582B2:						
Homen	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to saturated zone	0.99
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.36		
582C2:						
Homen	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.99	K factor >0.35	1.00	Depth to saturated zone	0.99
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.99		
657A:						
Burksville	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			Ponded	1.00		
			<36 inches to water table	1.00	Ponding	1.00
					Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
658F:						
Sonsac	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	Depth to hard bedrock	1.00
	>15% rock fragments >7cm in size	1.00	>15% rock fragments >7cm in size	1.00	>15% slope	1.00
	Shallow hard bedrock <100cm (40")	1.00	Shallow hard bedrock <100cm (40")	1.00	Too clayey	0.50
			K factor <0.35 to >0.20	0.56	Content of large stones	0.10
					Cutbanks cave	0.10
785G:						
Lacrescent	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
	>15% rock fragments >7cm in size	1.00	Slope >8%	1.00	Content of large stones	1.00
			>15% rock fragments >7cm in size	1.00	Cutbanks cave	0.10
801D:						
Orthents, silty	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	1.00
			Slope >8%	1.00	>15% slope	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
802D:						
Orthents, loamy	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	>15% slope	1.00
			K factor <0.35 to >0.20	0.89	Depth to saturated zone	0.24
					Cutbanks cave	0.10
864:						
Pits, quarries	Not rated		Not rated		Not rated	
878C3:						
Coulterville	Somewhat limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >8%	1.00		
Grantfork	Somewhat limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >8%	1.00	Too clayey	0.02
880B2:						
Coulterville	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.25	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.25		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
880B2:						
Darmstadt-----------	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.25	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.25		
882A:						
Oconee--------------	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
Darmstadt-----------	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
Coulterville--------	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
882B:						
Oconee--------------	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.25	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.25		
Coulterville--------	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.25	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.25		
Darmstadt-----------	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.25	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.25		
884B2:						
Bunkum--------------	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.36		
Coulterville--------	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.36		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
884C3:						
Bunkum	Somewhat limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >8%	1.00		
Coulterville	Somewhat limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >8%	1.00		
886F:						
Ruma	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Depth to saturated zone	0.15
					Cutbanks cave	0.10
Ursa	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	>15% slope	1.00
			K factor <0.35 to >0.20	0.89	Depth to saturated zone	0.15
					Too clayey	0.12
					Cutbanks cave	0.10
886F3:						
Ruma	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Depth to saturated zone	0.15
					Cutbanks cave	0.10
Ursa	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	>15% slope	1.00
			K factor <0.35 to >0.20	0.56	Depth to saturated zone	0.15
					Too clayey	0.12
					Cutbanks cave	0.10
897D3:						
Bunkum	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	1.00
			Slope >8%	1.00	8 to 15% slope	0.96
			<36 inches to water table	1.00	Cutbanks cave	0.10
Atlas	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	8 to 15% slope	0.96
			K factor <0.35 to >0.20	0.56	Cutbanks cave	0.10
					Too clayey	0.02
907D3:						
Redbud	Very limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	0.99
			Slope >8%	1.00	8 to 15% slope	0.96
			<36 inches to water table	1.00	Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
907D3:						
Colp	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	8 to 15% slope	0.96
			K factor <0.35 to >0.20	0.89	Cutbanks cave	0.10
					Too clayey	0.02
988F:						
Westmore	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
	Shallow hard bedrock >100cm to <150cm (40" to 60")	0.61	Slope >8%	1.00	Depth to hard bedrock	0.61
	<15% & >5% rock fragments >7cm in size	0.02	Shallow hard bedrock >100cm to <150cm (40" to 60")	0.61	Too clayey	0.32
			<15% & >5% rock fragments >7cm in size	0.02	Cutbanks cave	0.10
Neotoma	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
	>15% rock fragments >7cm in size	1.00	Slope >8%	1.00	Content of large stones	0.59
			>15% rock fragments >7cm in size	1.00	Cutbanks cave	0.10
993A:						
Cowden	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
Piasa	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Ponding	1.00
			Ponded	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Cutbanks cave	0.10
1071A:						
Darwin, undrained	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.56	Too clayey	0.68
					Flooding	0.50
					Cutbanks cave	0.10
1457A:						
Booker, undrained	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.56	Too clayey	1.00
					Flooding	0.60
					Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
1591A:						
Fults, undrained	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.89	Cutbanks cave	1.00
					Too clayey	0.88
					Flooding	0.60
3092B:						
Sarpy	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope >1% but <8%	0.36	Slope >1% but <8%	0.36	Flooding	1.00
					Cutbanks cave	1.00
3226A:						
Wirt	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Flooding	1.00
					Depth to saturated zone	0.15
					Cutbanks cave	0.10
3288L:						
Petrolia	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Flooding	1.00
			K factor <0.35 to >0.20	0.89	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3333A:						
Wakeland	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Flooding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3333L:						
Wakeland	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Flooding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3334L:						
Birds	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Ponding	1.00
			Ponded	1.00	Flooding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3336A:						
Wilbur	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Flooding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
					Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
3391A:						
Blake	Not limited		Very limited:		Very limited:	
			<36 inches to water table	1.00	Flooding	1.00
			K factor <0.35 to >0.20	0.89	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3394B:						
Haynie	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Flooding	1.00
			Slope >1% but <8%	0.36	Depth to saturated zone	0.24
					Cutbanks cave	0.10
3646A:						
Fluvaquents, loamy	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Flooding	1.00
			K factor <0.35 to >0.20	0.89	Depth to saturated zone	1.00
					Cutbanks cave	0.10
3847L:						
Fluvaquents	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Flooding	1.00
			K factor <0.35 to >0.20	0.89	Depth to saturated zone	1.00
					Cutbanks cave	0.10
Orthents	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	>15% slope	1.00
			K factor <0.35 to >0.20	0.89	Depth to saturated zone	0.24
					Cutbanks cave	0.10
5079B:						
Menfro, karst	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.36		
5079C:						
Menfro, karst	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Cutbanks cave	0.10
			Slope >8%	1.00		
5079D:						
Menfro, karst	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Cutbanks cave	0.10
5079G:						
Menfro, karst	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
5491C:						
Ruma, karst	Very limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	0.15
			Slope >8%	1.00	Cutbanks cave	0.10
					8 to 15% slope	0.04
						0
5491D:						
Ruma, karst	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Depth to saturated zone	0.15
					Cutbanks cave	0.10
5491G:						
Ruma, karst	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	K factor >0.35	1.00	>15% slope	1.00
			Slope >8%	1.00	Depth to saturated zone	0.15
					Cutbanks cave	0.10
5582B:						
Homen, karst	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to saturated zone	0.99
			<36 inches to water table	1.00	Cutbanks cave	0.10
			Slope >1% but <8%	0.36		
5582C:						
Homen, karst	Very limited:		Very limited:		Somewhat limited:	
	Slope >8%	1.00	K factor >0.35	1.00	Depth to saturated zone	0.99
			Slope >8%	1.00	Cutbanks cave	0.10
			<36 inches to water table	1.00	8 to 15% slope	0.04
7430A:						
Raddle	Not limited		Very limited:		Somewhat limited:	
			K factor >0.35	1.00	Cutbanks cave	0.10
8038B:						
Rocher	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope >1% but <8%	0.36	K factor <0.35 to >0.20	0.89	Cutbanks cave	1.00
			Slope >1% but <8%	0.36	Flooding	0.60
8070A:						
Beaucoup	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.89	Flooding	0.60
					Cutbanks cave	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
8071L:						
Darwin	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.56	Too clayey	0.68
					Flooding	0.60
					Cutbanks cave	0.10
8078A:						
Arenzville	Not limited		Very limited:		Somewhat limited:	
			K factor >0.35	1.00	Flooding	0.60
					Depth to saturated zone	0.15
					Cutbanks cave	0.10
8084A:						
Okaw	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Ponding	1.00
			Ponded	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Flooding	0.60
					Too clayey	0.50
					Cutbanks cave	0.10
8122B:						
Colp	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Flooding	0.60
			Slope >1% but <8%	0.36	Cutbanks cave	0.10
					Too clayey	0.02
8122C:						
Colp	Somewhat limited:		Very limited:		Very limited:	
	Slope >8%	1.00	<36 inches to water table	1.00	Depth to saturated zone	1.00
			Slope >8%	1.00	Flooding	0.60
			K factor <0.35 to >0.20	0.89	Cutbanks cave	0.10
					Too clayey	0.02
8180A:						
Dupo	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Flooding	0.60
					Cutbanks cave	0.50
					Too clayey	0.12
8183A:						
Shaffton	Not limited		Very limited:		Very limited:	
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.56	Cutbanks cave	1.00
					Flooding	0.60

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
8284A:						
Tice	Not limited		Very limited:		Very limited:	
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.89	Flooding	0.60
					Cutbanks cave	0.10
8302A:						
Ambraw	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.56	Flooding	0.60
					Cutbanks cave	0.10
8304B:						
Landes	Somewhat limited:		Somewhat limited:		Very limited:	
	Slope >1% but <8%	0.36	Slope >1% but <8%	0.36	Cutbanks cave	1.00
			K factor <0.35 to >0.20	0.17	Flooding	0.60
8333A:						
Wakeland	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Flooding	0.60
					Cutbanks cave	0.10
8336A:						
Wilbur	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Flooding	0.60
					Cutbanks cave	0.10
8338B:						
Hurst	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Flooding	0.60
			Slope >1% but <8%	0.36	Too clayey	0.12
					Cutbanks cave	0.10
8394B:						
Haynie	Somewhat limited:		Very limited:		Somewhat limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Flooding	0.60
			Slope >1% but <8%	0.36	Depth to saturated zone	0.24
					Cutbanks cave	0.10
8436B:						
Meadowbank	Somewhat limited:		Very limited:		Very limited:	
	Slope >1% but <8%	0.36	K factor >0.35	1.00	Cutbanks cave	1.00
			Slope >1% but <8%	0.36	Flooding	0.60

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8457L:						
Booker	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.56	Too clayey	1.00
					Flooding	0.60
					Cutbanks cave	0.10
8591A:						
Fults	Not limited		Very limited:		Very limited:	
			Ponded	1.00	Ponding	1.00
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.56	Cutbanks cave	1.00
					Flooding	0.60
					Too clayey	0.32
8592A:						
Nameoki	Not limited		Very limited:		Very limited:	
			<36 inches to water table	1.00	Depth to saturated zone	1.00
			K factor <0.35 to >0.20	0.56	Cutbanks cave	1.00
					Flooding	0.60
					Too clayey	0.32
8787A:						
Banlic	Not limited		Very limited:		Very limited:	
			K factor >0.35	1.00	Depth to saturated zone	1.00
			<36 inches to water table	1.00	Flooding	0.60
					Cutbanks cave	0.50
8812F:						
Typic Hapludalfs	Very limited:		Very limited:		Very limited:	
	Slope >8%	1.00	Slope >8%	1.00	>15% slope	1.00
			Too Sandy	1.00	Flooding	0.60
			K factor <0.35 to >0.20	0.89	Cutbanks cave	0.10

Table 19.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
7D3:												
Atlas-----------	0-9	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	75-100	45-55	25-35
	9-31	Silty clay loam, silty clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-60	30-35
	31-51	Silty clay, clay, silty clay loam, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	45-65	25-40
	51-80	Silty clay, clay loam, loam	CH, CL	A-6, A-7	0	0	95-100	90-98	90-98	65-95	40-60	20-35
8F2:												
Hickory---------	0-12	Silt loam	CL	A-4, A-6	0	0-5	95-100	90-100	75-100	55-100	30-35	10-15
	12-46	Clay loam, silty clay loam, loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	85-100	70-100	65-95	50-85	35-45	15-25
	46-58	Loam, clay loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	25-40	10-20
	58-80	Loam, sandy loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-1	0-5	85-100	70-95	45-95	25-75	25-40	10-20
30F:												
Hamburg---------	0-7	Silt loam	CL-ML, ML	A-4	0	0	100	100	100	95-100	0-25	NP-5
	7-60	Silt loam, silt, very fine sandy loam	CL-ML, ML	A-4	0	0	100	100	100	95-100	0-25	NP-5

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
31A:												
Pierron---------	0-8	Silt loam	CL, ML	A-4, A-6	0	0	100	98-100	90-100	85-100	30-40	10-20
	8-20	Silt loam, silt	CL, ML	A-4, A-6	0	0	100	98-100	90-100	85-100	25-40	10-20
	20-36	Silty clay loam, silty clay	CH	A-7-6	0	0	100	100	95-100	93-100	50-60	30-40
	36-66	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	95-100	93-100	45-60	25-35
	66-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	35-45	15-25
46A:												
Herrick---------	0-13	Silt loam	CL, ML	A-7-6, A-6	0	0	100	100	95-100	90-100	35-45	15-25
	13-39	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	95-100	90-100	49-60	30-35
	39-60	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	40-55	20-35
	60-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	35-45	15-25
50A:												
Virden----------	0-15	Silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	15-74	Silty clay loam, silty clay, silt loam	CH, CL	A-7-6	0	0	100	100	95-100	95-100	40-60	20-35
	74-80	Silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	15-30
75B:												
Drury-----------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	95-100	90-100	25-35	10-15
	7-43	Silt loam	CL	A-4, A-6	0	0	100	95-100	95-100	90-100	30-35	10-15
	43-80	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	55-95	25-30	10-15
75C:												
Drury-----------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	95-100	90-100	25-35	10-15
	7-43	Silt loam	CL	A-4, A-6	0	0	100	95-100	95-100	90-100	30-35	10-15
	43-80	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	55-95	25-30	10-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
75D:												
Drury-----------	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	95-100	90-100	25-35	10-15
	6-40	Silt loam	CL	A-4, A-6	0	0	100	95-100	95-100	90-100	30-35	10-15
	40-80	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	55-95	25-30	10-15
75F:												
Drury-----------	0-5	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	95-100	90-100	25-35	10-15
	5-40	Silt loam	CL	A-4, A-6	0	0	100	95-100	95-100	90-100	30-35	10-15
	40-80	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	55-95	25-30	10-15
79B:												
Menfro----------	0-10	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	10-62	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	62-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	10-20
79C2:												
Menfro----------	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	7-56	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	56-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	10-20
79D3:												
Menfro----------	0-5	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-25
	5-50	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	50-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	10-20
79F:												
Menfro----------	0-9	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	9-52	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	52-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
79F3:												
Menfro----------	0-5	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-25
	5-50	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	50-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	10-20
90A:												
Bethalto--------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	92-100	30-35	10-15
	8-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	92-100	25-35	5-15
	15-70	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	98-100	95-100	30-45	10-20
	70-80	Silt loam	CL	A-6	0	0	100	100	98-100	95-100	30-35	10-15
109A:												
Racoon----------	0-6	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	30-35	10-15
	6-26	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	30-35	10-15
	26-39	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	95-100	90-100	35-45	15-20
	39-47	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-45	15-20
	47-60	Silt loam, silty clay loam, loam	CL, ML	A-4, A-6, A-7	0	0	95-100	90-100	75-100	60-90	30-40	10-20
123.												
Riverwash												
216G:												
Stookey---------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	25-30	5-15
	6-62	Silt loam	CL	A-6	0	0	100	100	98-100	93-100	30-35	10-15
	62-80	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	93-100	20-35	5-15
267A:												
Caseyville------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	30-35	10-15
	7-16	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	16-62	Silty clay loam, silt loam	CL	A-4, A-6, A-7-6	0	0	100	100	98-100	93-100	30-45	10-20
	62-80	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	93-100	30-35	10-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
267B:												
Caseyville	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	30-35	10-15
	7-16	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	16-62	Silty clay loam, silt loam	CL	A-4, A-6, A-7-6	0	0	100	100	98-100	93-100	30-45	10-20
	62-80	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	93-100	30-35	10-15
423A:												
Millstadt	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	25-35	5-15
	9-18	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	85-100	25-40	5-20
	18-53	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	10-20
	53-80	Silty clay, silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	90-100	85-100	35-60	15-35
437B:												
Redbud	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	93-100	25-35	5-15
	9-16	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	93-100	25-40	5-20
	16-45	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-20
	45-80	Silty clay loam, silty clay, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	90-100	85-100	35-60	15-35
438B:												
Aviston	0-16	Silt loam	CL	A-6	0	0	100	100	95-100	93-100	25-35	10-15
	16-67	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	35-45	15-20
	67-80	Silt loam, loam, silty clay loam, clay loam	CL	A-6	0	0	100	98-100	90-100	85-100	30-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
438C2:												
Aviston---------	0-10	Silt loam	CL	A-6	0	0	100	100	95-100	93-100	25-35	10-15
	10-57	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	35-45	15-20
	57-80	Silt loam, loam, silty clay loam, clay loam	CL	A-6	0	0	100	98-100	90-100	85-100	30-40	10-20
477B:												
Winfield--------	0-9	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	9-13	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	15-20
	13-62	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	62-80	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	30-35	10-15
477C2:												
Winfield--------	0-6	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	6-50	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-20
	50-80	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	30-35	10-15
491B:												
Ruma------------	0-8	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	93-100	30-35	10-15
	8-56	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-20
	56-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	100	98-100	90-100	85-93	30-40	10-15
491C2:												
Ruma------------	0-6	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	93-100	30-35	10-15
	6-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-20
	48-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	100	98-100	90-100	85-93	30-40	10-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
491D3:												
Ruma------------	0-5	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	35-45	15-20
	5-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-25
	48-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	100	98-100	90-100	85-93	30-40	10-20
515C3:												
Bunkum----------	0-8	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	8-40	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	40-58	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	58-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	30-40	10-15
515D3:												
Bunkum----------	0-8	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	8-40	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	40-58	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	58-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	30-40	10-15
517A:												
Marine----------	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	30-35	10-15
	9-17	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	17-34	Silty clay loam, silty clay	CH	A-7	0	0	100	100	95-100	95-100	50-65	30-40
	34-62	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	30-50	15-30
	62-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	35-45	15-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
517B:												
Marine----------	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	30-35	10-15
	9-17	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	17-34	Silty clay loam, silty clay	CH	A-7	0	0	100	100	95-100	95-100	50-65	30-40
	34-62	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	30-50	15-30
	62-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	35-45	15-25
582B:												
Homen-----------	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	9-15	Silt loam	CL, ML	A-4, A-6	0	0	100	100	98-100	95-100	25-35	10-15
	15-58	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	58-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	30-40	10-20
582B2:												
Homen-----------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	7-50	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	50-80	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	30-40	10-20
582C2:												
Homen-----------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	7-50	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	50-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	30-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
657A:												
Burksville------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	25-35	5-15
	7-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-100	25-35	5-15
	13-54	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-45	15-20
	54-80	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	10-20
658F:												
Sonsac----------	0-3	Flaggy silt loam	CH, CL	A-6, A-7	0-5	5-25	75-95	70-95	70-95	65-95	25-35	5-15
	3-6	Flaggy silty clay loam, flaggy silt loam	CH, CL	A-7	5-10	10-30	75-100	55-100	50-100	50-95	30-45	10-20
	6-24	Very flaggy silty clay, very flaggy clay, extremely flaggy silty clay	CH, CL	A-7	5-15	15-45	75-100	55-100	50-100	50-95	50-65	25-40
	24-28	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
785G:												
Lacrescent------	0-14	Flaggy silt loam	CL	A-6	5-15	15-30	80-100	70-100	60-95	50-90	30-35	10-15
	14-32	Cobbly silt loam, cobbly fine sandy loam, very flaggy loam	CL, ML, SC, SM	A-1, A-2, A-4, A-6	10-20	30-55	55-80	45-80	40-65	20-60	20-35	5-15
	32-60	Extremely flaggy loam, very cobbly silt loam, very cobbly fine sandy loam	CL, ML, SC, SM	A-1, A-2, A-4, A-6	15-30	50-65	50-75	40-65	35-60	15-55	0-30	5-10
801D:												
Orthents, silty	0-60	Silt loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	90-100	80-95	30-35	10-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
802D:												
Orthents, loamy	0-6	Loam	CL	A-6	0	0-5	95-100	90-100	85-95	60-90	20-40	10-20
	6-60	Loam, clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	60-90	20-40	10-20
864.												
Pits, quarries												
878C3:												
Coulterville----	0-5	Silty clay loam			0	0	100	100	95-100	90-100	35-45	15-20
	5-20	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	15-20
	20-48	Silty clay loam, silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	30-45	10-20
	48-80	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-95	30-40	10-20
Grantfork-------	0-5	Silty clay loam	CL	A-7, A-6	0	0	100	95-100	85-95	80-90	35-45	15-20
	5-37	Silty clay loam, silt loam, loam, clay loam	CL	A-7, A-6	0	0	100	90-100	80-90	70-80	30-45	10-20
	37-67	Clay loam, loam	CL	A-7, A-6	0	0-5	95-100	85-95	70-80	55-75	30-45	10-20
	67-80	Clay, clay loam, silty clay loam, loam	CH, CL	A-6, A-7	0	0-5	95-100	85-95	70-80	55-75	35-55	15-30
880B2:												
Coulterville----	0-7	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	10-15
	7-23	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	15-20
	23-68	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	10-20
	68-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	30-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
880B2:												
Darmstadt-------	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	75-100	25-35	5-15
	11-21	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-20
	21-39	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	10-20
	39-62	Silt loam, silty clay loam	CL	A-6, A-4	0	0	100	100	95-100	95-100	30-40	10-20
	62-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	30-40	10-20
882A:												
Oconee----------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	15-25
	8-16	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	15-25
	16-47	Silty clay loam, silty clay	CL	A-7	0	0	100	100	95-100	90-100	40-60	30-35
	47-65	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	40-50	20-30
	65-80	Silt loam, loam, silty clay loam, clay loam	CL	A-6, A-7-6	0	0	100	100	90-100	80-100	30-50	10-20
Darmstadt-------	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	75-100	20-30	5-15
	11-21	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	15-20
	21-39	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	15-20
	39-62	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	10-20
	62-80	Silt loam, loam, silty clay loam, clay loam			0	0	100	95-100	90-100	80-100	30-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
882A:												
Coulterville----	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	7-23	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	15-20
	23-56	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	10-20
	56-80	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-95	30-40	10-20
882B:												
Oconee----------	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-25
	8-16	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-25
	16-47	Silty clay loam, silty clay	CH	A-7	0	0	100	100	95-100	90-100	50-60	30-35
	47-65	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	15-30
	65-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	35-45	15-25
Coulterville----	0-7	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	10-15
	7-23	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	15-20
	23-68	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	10-20
	68-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	30-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
882B:												
Darmstadt-------	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	75-100	25-35	5-15
	11-21	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-20
	21-39	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	10-20
	39-62	Silt loam, silty clay loam	CL	A-6, A-4	0	0	100	100	95-100	90-100	30-40	10-20
	62-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	95-100	90-100	80-100	30-40	10-20
884B2:												
Bunkum----------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	8-44	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	44-62	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	62-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	99-100	95-100	90-100	85-100	30-40	10-20
Coulterville----	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	10-15
	7-23	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	15-20
	23-56	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	10-20
	56-80	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-95	30-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
884C3:												
Bunkum----------	0-8	Silty clay loam	CL	A-4, A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	8-40	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	40-58	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	58-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	99-100	95-100	90-100	85-100	30-40	10-20
Coulterville----	0-5	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-20
	5-20	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	15-20
	20-48	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-45	10-20
	48-80	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-95	30-40	10-20
886F:												
Ruma------------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	93-100	30-35	10-15
	8-56	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-20
	56-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	100	98-100	90-100	85-93	30-40	10-20
Ursa------------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	80-100	35-45	15-25
	7-60	Silty clay, silty clay loam, clay loam, clay	CH, CL	A-7	0	0-5	95-100	85-98	70-90	55-90	50-70	30-45
	60-80	Silty clay, clay loam, loam	CH, CL	A-6, A-7	0-1	0-5	95-100	85-98	80-90	60-85	40-60	20-35

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
886F3:												
Ruma------------	0-5	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	35-45	15-20
	5-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-20
	48-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	100	98-100	90-100	85-93	30-40	10-20
Ursa------------	0-3	Silty clay loam	CL	A-6, A-7	0	0	100	90-100	90-100	80-95	45-55	25-35
	3-68	Silty clay, silty clay loam, clay loam, clay	CH, CL	A-7	0	0-5	95-100	85-98	70-90	55-90	50-70	30-45
	68-80	Silty clay, clay loam, loam	CH, CL	A-6, A-7	0-1	0-5	95-100	85-98	80-90	60-85	40-60	20-35
897D3:												
Bunkum----------	0-7	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	7-40	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	40-58	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	58-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	30-50	10-20
Atlas-----------	0-7	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	75-100	45-55	25-35
	7-31	Silty clay loam, silty clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-60	30-35
	31-51	Silty clay, clay, silty clay loam, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	45-65	25-40
	51-80	Silty clay, clay loam, loam	CH, CL	A-6, A-7	0	0	95-100	90-98	90-98	65-95	40-60	20-35

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
907D3:												
Redbud----------	0-5	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	35-45	15-20
	5-40	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-20
	40-80	Silty clay loam, silty clay, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	90-100	85-100	35-60	15-35
Colp------------	0-5	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	45-50	25-30
	5-70	Silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	90-100	50-65	30-40
	70-80	Stratified silty clay loam to silty clay	CH	A-7	0	0	100	100	95-100	85-100	45-60	25-35
988F:												
Westmore--------	0-10	Silt loam	CL, CL-ML, ML	A-4	0	0	100	90-100	80-100	70-95	25-35	10-15
	10-22	Silty clay loam, silt loam	CL, ML	A-6, A-7	0-2	0-5	95-100	90-100	85-100	80-90	35-45	15-20
	22-60	Clay, silty clay, channery silty clay loam	CH, CL	A-6, A-7	0-5	0-15	80-100	65-95	60-90	55-90	45-65	20-40

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
988F:												
Neotoma	0-3	Flaggy silt loam	GM, ML, SM	A-4	0-5	10-30	55-85	50-80	50-75	45-70	0-25	NP-10
	3-50	Channery silt loam, very flaggy loam, extremely flaggy fine sandy loam, extremely flaggy sandy clay loam	GM, ML, SM	A-4	5-15	10-50	50-80	50-80	45-70	40-60	20-35	5-15
	50-60	Very flaggy loam, extremely flaggy sandy loam, very flaggy sandy clay loam	GM	A-2, A-4	10-30	40-85	40-65	35-60	30-50	25-45	0-30	NP-10
993A:												
Cowden	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-25
	8-19	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-25
	19-50	Silty clay loam, silty clay	CH	A-7-6	0	0	100	100	95-100	95-100	50-60	30-35
	50-58	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	35-45	15-25
	58-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	35-45	15-25
Piasa	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-25
	8-12	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-25
	12-48	Silty clay loam, silty clay	CH	A-7	0	0	100	100	95-100	95-100	50-60	30-35
	48-80	Silt loam, loam, silty clay loam, clay loam	ML, CL	A-6	0	0	100	100	90-100	80-100	35-45	15-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
1071A:												
Darwin, undrained------	0-20	Silty clay	CH, CL	A-7	0	0	100	100	100	90-100	55-70	35-55
	20-64	Silty clay, clay	CH, CL	A-7	0	0	100	100	100	85-100	60-75	35-50
	64-80	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0	0	100	100	95-100	90-100	45-70	25-45
1457A:												
Booker, undrained------	0-16	Clay	CH, CL	A-7	0	0	100	100	95-100	95-100	75-85	50-60
	16-60	Clay	CH	A-7	0	0	100	100	100	95-100	75-90	50-65
1591A:												
Fults, undrained	0-13	Silty clay	CH	A-7	0	0	100	100	100	90-100	55-70	35-45
	13-20	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-100	50-75	30-50
	20-56	Silty clay loam, sandy clay loam, sandy loam	CL, SC	A-6, A-7	0	0	100	95-100	80-95	40-85	30-50	15-30
	56-70	Stratified silty clay loam to very fine sand	CL, ML, SC, SM	A-2, A-3, A-4, A-6	0	0	100	90-100	60-90	5-80	0-45	NP-25
3092B:												
Sarpy-----------	0-9	Fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-80	2-15	0-0	NP
	9-60	Stratified loamy fine sand to very fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-80	2-35	0-0	NP
3226A:												
Wirt------------	0-13	Silt loam	CL-ML, ML	A-4	0	0	100	95-100	80-100	60-90	20-30	5-10
	13-33	Silt loam, loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	95-100	80-100	50-100	25-85	0-30	NP-10
	33-60	Loam, gravelly sandy loam, gravelly loamy sand	CL-ML, ML, SC-SM, SM	A-1-b, A-2-4, A-4	0	0-2	80-100	50-100	30-95	15-75	0-30	NP-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
3288L:												
Petrolia--------	0-8	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	80-100	35-40	15-20
	8-55	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-100	35-40	15-20
	55-80	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	80-100	60-100	30-40	10-20
3333A:												
Wakeland--------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	5-10
	8-68	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	5-10
	68-80	Silt loam, loam	CL, CL-ML, ML	A-4	0	0	100	100	85-100	60-100	20-30	5-10
3333L:												
Wakeland--------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	5-10
	8-68	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	5-10
	68-80	Silt loam, loam	CL, CL-ML, ML	A-4	0	0	100	100	85-100	60-100	20-30	5-10
3334L:												
Birds-----------	0-8	Silt loam	CL	A-4, A-6	0	0	100	95-100	90-100	80-100	25-35	10-15
	8-63	Silt loam			0	0	100	95-100	90-100	80-100	30-35	10-15
	63-80	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	95-100	90-100	80-100	25-40	10-20
3336A:												
Wilbur----------	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	95-100	70-100	20-30	5-10
	7-41	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	95-100	80-100	20-30	5-10
	41-65	Silt loam, loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	80-100	60-100	20-35	5-15
3391A:												
Blake-----------	0-6	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-95	35-45	15-25
	6-33	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	85-95	30-45	15-25
	33-60	Stratified silt loam to very fine sandy loam	CL, ML	A-4, A-6	0	0	100	100	80-90	75-90	20-30	5-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
3394B:												
Haynie----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	70-100	25-35	5-15
	8-42	Silt loam, very fine sandy loam			0	0	100	100	85-100	85-100	25-30	5-10
	42-60	Stratified silt loam to very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	85-100	20-30	5-10
3646A:												
Fluvaquents, loamy----------	0-10	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-100	55-85	25-35	5-15
	10-60	Sandy loam, sandy clay loam	ML, SC, SM, CL	A-1-b, A-2-4, A-4	0	0	90-100	85-100	45-85	20-60	0-35	NP-15
3847L:												
Fluvaquents-----	0-10	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-100	55-85	25-35	5-15
	10-60	Sandy loam, sandy clay loam	CL, ML, SC, SM	A-1-b, A-2-4, A-4	0	0	90-100	85-100	45-85	20-60	0-35	NP-15
Orthents--------	0-6	Loam	CL	A-6	0	0-5	95-100	90-100	85-95	60-90	30-35	10-15
	6-60	Loam, clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	60-90	30-40	15-20
5079B:												
Menfro, karst---	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	7-56	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	56-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	10-20
5079C:												
Menfro, karst---	0-5	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	5-50	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	50-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
5079D:												
Menfro, karst---	0-5	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	5-50	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	50-80	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	10-20
5079G:												
Menfro, karst---	0-9	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	9-52	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	52-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	10-20
5491C:												
Ruma, karst-----	0-5	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	35-45	15-25
	5-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-25
	48-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	100	98-100	90-100	85-93	30-40	10-20
5491D:												
Ruma, karst-----	0-5	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	35-45	15-25
	5-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-25
	48-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	100	98-100	90-100	85-93	30-40	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
5491G:												
Ruma, karst-----	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	93-100	30-35	10-15
	7-45	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	93-100	30-45	15-20
	45-80	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0	100	98-100	90-100	85-93	30-40	10-15
5582B:												
Homen, karst----	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	9-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	98-100	95-100	25-35	10-15
	15-58	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	58-80	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	30-40	10-20
5582C:												
Homen, karst----	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	95-100	30-35	10-15
	7-50	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	95-100	35-45	15-20
	50-80	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	30-40	10-20
7430A:												
Raddle----------	0-20	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	30-35	10-15
	20-65	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-100	30-35	10-15
	65-80	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-35	10-15
8038B:												
Rocher----------	0-5	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	50-85	20-30	5-10
	5-53	Very fine sand, loamy very fine sand, very fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	50-85	0-30	NP-10
	53-62	Stratified fine sandy loam to very fine sand	CL, ML, SC, SM	A-2, A-4	0	0	100	100	90-100	30-90	0-25	NP-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8070A:												
Beaucoup--------	0-16	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-45	15-20
	16-64	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-45	15-20
	64-80	Stratified silty clay loam to very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-95	20-40	5-20
8071L:												
Darwin----------	0-16	Silty clay	CH, CL	A-7	0	0	100	100	100	90-100	55-70	35-45
	16-62	Silty clay, clay	CH, CL	A-7	0	0	100	100	100	85-100	60-75	35-50
	62-80	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0	0	100	100	95-100	90-100	45-70	25-45
8078A:												
Arenzville------	0-31	Silt loam	CL, CL-ML	A-4	0	0	100	100	95-100	80-95	25-30	5-10
	31-56	Silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-95	25-40	10-20
	56-70	Silt loam, silty clay loam	CL, CL-ML	A-4	0	0	75-100	75-100	75-100	70-95	25-40	10-20
8084A:												
Okaw------------	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	15-25
	7-15	Silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-45	10-25
	15-54	Silty clay, clay	CH	A-7	0	0	100	100	95-100	85-100	55-75	35-50
	54-80	Stratified clay to silty clay loam	CH	A-7	0	0	100	100	95-100	80-100	50-70	30-45

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8122B:												
Colp	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	35-45	15-25
	8-12	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	35-40	15-20
	12-70	Silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	90-100	50-65	30-40
	70-80	Stratified silty clay loam to silty clay	CH	A-7	0	0	100	100	95-100	85-100	45-60	25-35
8122C:												
Colp	0-5	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	45-50	25-30
	5-70	Silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	90-100	50-65	30-40
	70-80	Stratified silty clay loam to silty clay	CH	A-7	0	0	100	100	95-100	85-100	45-60	25-35
8180A:												
Dupo	0-9	Silt loam	CL, CL-ML	A-4	0	0	100	100	100	95-100	25-30	5-10
	9-25	Silt loam, silt	CL, CL-ML	A-4	0	0	100	100	100	95-100	20-30	5-10
	25-80	Silty clay, clay, silty clay loam	CH	A-7-6	0	0	100	100	100	98-100	50-70	30-45
8183A:												
Shaffton	0-10	Clay loam	CL	A-6	0	0	100	100	85-95	60-80	35-45	15-20
	10-21	Clay loam, loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-95	55-65	30-40	10-20
	21-43	Loam, fine sandy loam	SC-SM, SM, SP-SM	A-2	0	0	100	100	50-75	10-30	25-35	10-15
	43-60	Stratified silt loam to fine sand	CL	A-6, A-7	0	0	100	100	90-100	80-95	0-30	NP-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8284A:												
Tice-----------	0-16	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-45	15-20
	16-72	Silty clay loam, silt loam	CH, CL	A-7	0	0	100	100	95-100	85-95	30-45	15-20
	72-80	Stratified silty clay loam to very fine sandy loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	60-95	55-80	20-40	5-20
8302A:												
Ambraw----------	0-11	Silty clay loam	CL	A-6, A-7	0	0	100	100	85-95	85-95	35-45	15-20
	11-21	Clay loam, clay, loam	CH, CL	A-6, A-7	0	0	100	100	80-90	60-80	35-50	15-25
	21-34	Clay loam, sandy clay loam, loam	CL, SC	A-6, A-7	0	0	100	90-100	85-95	40-80	35-45	15-20
	34-60	Stratified clay loam to fine sandy loam	CL, ML, SC, SM	A-4, A-6	0	0	100	90-100	80-90	40-80	30-40	10-20
8304B:												
Landes----------	0-14	Very fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	70-100	70-95	20-50	5-30	NP-10
	14-39	Loam, very fine sandy loam, loamy fine sand	CL-ML, SC, SC-SM, SM	A-2-4, A-4	0	0	100	85-100	70-100	15-60	0-30	NP-10
	39-80	Stratified silt loam to very fine sand	SC, SC-SM, SM, SP-SM	A-2-4, A-4	0	0	100	85-100	70-85	10-50	0-30	NP-10
8333A:												
Wakeland--------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	5-10
	8-68	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	80-100	20-30	5-10
	68-80	Silt loam, loam	CL, CL-ML, ML	A-4	0	0	100	100	85-100	60-100	20-30	5-10
8336A:												
Wilbur----------	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	95-100	70-100	20-30	5-10
	7-41	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	95-100	80-100	20-30	5-10
	41-65	Silt loam, loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	80-100	60-100	20-35	5-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8338B:												
Hurst-----------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	75-100	35-45	15-25
	6-10	Silt loam, silty clay loam	CL	A-6, A-4	0	0	100	100	95-100	90-100	35-45	15-25
	10-56	Silty clay, clay, silty clay loam	CL, CH	A-7	0	0	100	100	95-100	90-100	50-70	30-45
	56-80	Stratified silty clay loam to silty clay	CH, CL	A-6, A-7	0	0	100	100	90-100	85-100	45-60	25-35
8394B:												
Haynie----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	70-100	25-35	5-15
	8-42	Silt loam, very fine sandy loam			0	0	100	100	85-100	85-100	25-30	5-10
	42-60	Stratified silt loam to very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	85-100	20-30	5-10
8436B:												
Meadowbank------	0-17	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	95-100	90-100	25-35	10-15
	17-34	Silty clay loam	CL	A-6	0	0	100	95-100	95-100	90-100	35-45	15-25
	34-53	Stratified clay loam to fine sandy loam	CL, ML, SC, SM	A-4, A-6	0	0	100	90-100	80-90	35-70	20-40	5-20
	53-80	Stratified sandy loam to fine sand	SM, SP-SM	A-1-b, A-2	0	0	100	85-100	20-60	10-50	0-20	NP-5
8457L:												
Booker----------	0-13	Clay	CH, CL	A-7	0	0	100	100	95-100	95-100	75-85	50-60
	13-60	Clay	CH	A-7	0	0	100	100	100	95-100	75-90	50-65

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8591A:												
Fults-----------	0-12	Silty clay	CH	A-7	0	0	100	100	100	90-100	55-70	35-45
	12-32	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-100	50-75	30-50
	32-42	Silty clay loam, sandy clay loam, sandy loam	CL, SC	A-6, A-7	0	0	100	95-100	80-95	40-85	30-50	15-30
	42-60	Stratified silty clay loam to very fine sand	CL, ML, SC, SM	A-2, A-3, A-4, A-6	0	0	100	90-100	60-90	5-80	0-45	NP-25
8592A:												
Nameoki---------	0-12	Silty clay	CH	A-7	0	0	100	100	100	90-100	55-70	35-45
	12-28	Silty clay, silty clay loam, clay	CH	A-7	0	0	100	100	95-100	85-100	50-75	30-50
	28-54	Silty clay loam, silt loam, clay loam, loam	CL, SC	A-6, A-7-6	0	0	100	95-100	80-95	40-85	30-50	15-30
	54-80	Stratified silty clay loam to very fine sand	CL, ML, SC, SM	A-2, A-3, A-4, A-6	0	0	100	90-100	60-90	5-80	0-45	NP-25
8787A:												
Banlic----------	0-8	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-95	20-30	5-10
	8-21	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-95	20-30	5-10
	21-55	Silt loam, silt	CL, CL-ML	A-4	0	0	100	100	90-100	85-95	20-30	5-10
	55-77	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-95	20-30	5-10
8812F:												
Typic Hapludalfs	0-6	Silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	85-100	45-50	25-30
	6-60	Variable	CL, ML, SC, SM	A-2-4, A-4, A-6	0	0-3	90-100	80-100	60-95	30-85	25-60	10-35

Table 20.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
7D3:														
Atlas	0-9	5-20	40-60	30-40	1.35-1.55	0.06-0.2	0.14-0.19	6.0-8.9	0.5-1.0	.28	.28	2	7	38
	9-31	10-35	20-55	35-45	1.35-1.55	0.01-0.06	0.07-0.19	6.0-8.9	0.1-0.5	.28	.28			
	31-51	10-35	20-55	30-50	1.35-1.55	0.01-0.06	0.07-0.19	6.0-8.9	0.1-0.5	.28	.28			
	51-80	10-40	20-50	25-45	1.35-1.60	0.06-0.2	0.07-0.18	3.0-5.9	0.1-0.5	.28	.28			
8F2:														
Hickory	0-12	10-30	45-70	18-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	12-46	15-45	30-50	24-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.1-0.5	.28	.32			
	46-58	25-49	30-50	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.1-0.5	.28	.32			
	58-80	30-55	25-50	15-30	1.50-1.75	0.6-2	0.10-0.15	0.0-2.9	0.1-0.5	.28	.32			
30F:														
Hamburg	0-7	10-20	65-85	5-15	1.20-1.30	0.6-2	0.20-0.24	0.0-2.9	0.5-2.0	.43	.43	5	4L	86
	7-60	10-50	45-82	6-12	1.20-1.30	0.6-2	0.17-0.22	0.0-2.9	0.1-0.5	.55	.55			
31A:														
Pierron	0-8	1-7	71-85	12-25	1.25-1.45	0.6-2	0.18-0.22	0.0-2.9	1.0-3.0	.43	.43	3	5	56
	8-20	1-7	70-88	10-22	1.30-1.50	0.06-0.2	0.15-0.20	0.0-2.9	0.1-0.5	.55	.55			
	20-36	1-7	46-64	35-45	1.35-1.60	0.01-0.06	0.10-0.18	6.0-8.9	0.1-0.5	.37	.37			
	36-66	1-7	54-70	27-42	1.35-1.60	0.01-0.06	0.12-0.18	6.0-8.9	0.1-0.5	.37	.37			
	66-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.5	.37	.37			
46A:														
Herrick	0-13	1-7	64-78	20-27	1.15-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	13-39	1-7	51-63	32-42	1.20-1.40	0.2-0.6	0.12-0.17	6.0-8.9	0.2-1.0	.37	.37			
	39-60	1-7	55-73	25-40	1.20-1.40	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	60-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.3	.37	.37			
50A:														
Virden	0-15	1-7	64-78	20-27	1.20-1.40	0.6-2	0.21-0.24	3.0-5.9	3.0-6.0	.28	.28	5	6	48
	15-74	1-7	50-70	25-42	1.20-1.45	0.2-0.6	0.11-0.20	6.0-8.9	0.5-1.5	.37	.37			
	74-80	1-7	65-75	20-32	1.25-1.55	0.2-0.6	0.18-0.22	3.0-5.9	0.1-0.5	.49	.49			
75B:														
Drury	0-7	1-15	70-80	15-25	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.49	.49	5	5	56
	7-43	1-15	65-80	18-25	1.25-1.45	0.6-2	0.20-0.22	0.0-2.9	0.2-0.8	.49	.49			
	43-80	5-25	65-77	15-22	1.30-1.50	0.6-2	0.12-0.21	0.0-2.9	0.1-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
75C:														
Drury---------------	0-7	1-15	70-80	15-25	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.49	.49	5	5	56
	7-43	1-15	65-80	18-25	1.25-1.45	0.6-2	0.20-0.22	0.0-2.9	0.2-0.8	.49	.49			
	43-80	5-25	65-77	15-22	1.30-1.50	0.6-2	0.12-0.21	0.0-2.9	0.1-0.5	.49	.49			
75D:														
Drury---------------	0-6	1-15	70-80	15-25	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.49	.49	5	5	56
	6-40	1-15	65-80	18-25	1.25-1.45	0.6-2	0.20-0.22	0.0-2.9	0.2-0.8	.49	.49			
	40-80	5-25	65-77	15-22	1.30-1.50	0.6-2	0.12-0.21	0.0-2.9	0.1-0.5	.49	.49			
75F:														
Drury---------------	0-5	1-15	70-80	15-25	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.49	.49	5	5	56
	5-40	1-15	65-80	18-25	1.25-1.45	0.6-2	0.20-0.22	0.0-2.9	0.2-0.8	.49	.49			
	40-80	5-25	65-77	15-22	1.30-1.50	0.6-2	0.12-0.21	0.0-2.9	0.1-0.5	.49	.49			
79B:														
Menfro--------------	0-10	1-7	68-80	18-27	1.25-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	10-62	1-7	62-70	24-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	62-80	1-7	68-80	15-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
79C2:														
Menfro--------------	0-7	1-7	68-80	18-27	1.25-1.40	0.6-2	0.22-0.24	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-56	1-7	62-70	24-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	56-80	1-7	68-80	15-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
79D3:														
Menfro--------------	0-5	1-7	60-72	27-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37	5	7	38
	5-50	1-7	62-70	24-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	50-80	1-7	68-80	15-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
79F:														
Menfro--------------	0-9	1-7	68-80	18-27	1.25-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-52	1-7	62-70	24-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	52-80	1-7	68-80	15-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
79F3:														
Menfro--------------	0-5	1-7	60-72	27-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37	3	7	38
	5-50	1-7	62-70	24-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	50-80	1-7	68-80	15-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
90A:														
Bethalto------------	0-8	1-7	68-80	18-27	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	8-15	1-7	72-80	15-25	1.30-1.40	0.6-2	0.20-0.22	0.0-2.9	0.2-0.8	.43	.43			
	15-70	1-7	60-75	20-35	1.30-1.45	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	70-80	1-7	68-80	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
109A:														
Racoon--------------	0-6	1-7	68-80	18-27	1.30-1.50	0.2-0.6	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	6-26	1-7	68-80	18-27	1.35-1.55	0.2-0.6	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
	26-39	1-7	60-70	27-35	1.35-1.60	0.06-0.2	0.15-0.20	3.0-5.9	0.2-0.8	.37	.37			
	39-47	1-7	60-70	24-35	1.35-1.60	0.06-0.2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	47-60	5-35	45-70	18-30	1.40-1.65	0.2-0.6	0.15-0.20	3.0-5.9	0.1-0.5	.49	.49			
123.														
Riverwash														
216G:														
Stookey-------------	0-6	1-7	73-85	12-22	1.10-1.45	0.6-2	0.22-0.24	3.0-5.9	1.0-3.0	.43	.43	5	5	56
	6-62	1-7	68-80	18-27	1.20-1.60	0.6-2	0.20-0.22	3.0-5.9	0.2-0.8	.43	.43			
	62-80	1-7	73-85	10-24	1.20-1.50	0.6-2	0.18-0.20	3.0-5.9	0.1-0.5	.55	.55			
267A:														
Caseyville----------	0-7	1-7	68-80	18-27	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-16	1-7	68-80	15-30	1.30-1.40	0.6-2	0.20-0.22	3.0-5.9	0.1-0.5	.49	.49			
	16-62	1-7	61-75	20-35	1.30-1.45	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	62-80	1-7	68-80	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
267B:														
Caseyville----------	0-7	1-7	68-80	18-27	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-16	1-7	68-80	15-30	1.30-1.40	0.6-2	0.20-0.22	3.0-5.9	0.1-0.5	.49	.49			
	16-62	1-7	61-75	20-35	1.30-1.45	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	62-80	1-7	68-80	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
423A:														
Millstadt-----------	0-9	1-7	71-85	12-25	1.25-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-18	1-7	65-85	12-30	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.1-0.5	.49	.49			
	18-53	1-7	56-75	22-35	1.35-1.60	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	53-80	5-15	40-60	24-55	1.35-1.60	0.06-0.2	0.10-0.18	6.0-8.9	0.1-0.5	.37	.37			
437B:														
Redbud--------------	0-9	1-7	71-85	12-25	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-16	1-7	68-80	12-32	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.2-0.6	.49	.49			
	16-45	1-7	60-75	22-35	1.35-1.60	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	45-80	5-15	40-60	24-55	1.35-1.60	0.06-0.2	0.10-0.18	6.0-8.9	0.1-0.3	.37	.37			
438B:														
Aviston-------------	0-16	1-7	70-80	15-27	1.25-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	16-67	1-7	57-75	24-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	67-80	5-30	45-70	15-30	1.35-1.60	0.6-2	0.18-0.22	3.0-5.9	0.1-0.5	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
438C2:														
Aviston	0-10	1-7	70-80	15-27	1.25-1.45	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	10-57	1-7	57-75	24-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	57-80	5-30	45-70	15-30	1.35-1.60	0.6-2	0.18-0.22	3.0-5.9	0.1-0.5	.37	.37			
477B:														
Winfield	0-9	1-7	64-78	20-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-13	1-7	65-75	22-30	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.1-0.5	.49	.49			
	13-62	1-7	62-70	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.1-0.5	.37	.37			
	62-80	1-7	64-78	20-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
477C2:														
Winfield	0-6	1-7	64-78	20-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	6-50	1-7	62-70	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.1-0.5	.37	.37			
	50-80	1-7	64-78	20-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
491B:														
Ruma	0-8	1-7	64-78	20-27	1.20-1.30	0.6-2	0.18-0.20	3.0-5.9	1.0-3.0	.43	.43	5	6	48
	8-56	1-7	61-75	22-35	1.25-1.40	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	56-80	5-30	45-70	20-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
491C2:														
Ruma	0-6	1-7	64-78	20-27	1.20-1.30	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	6-48	1-7	61-75	22-35	1.25-1.40	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	48-80	5-30	45-70	20-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
491D3:														
Ruma	0-5	1-7	55-72	27-35	1.20-1.30	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37	4	6	48
	5-48	1-7	61-75	22-35	1.25-1.40	0.6-2	0.18-0.22	3.0-5.9	0.1-0.5	.37	.37			
	48-80	5-30	45-70	20-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
515C3:														
Bunkum	0-8	1-7	55-72	27-35	1.25-1.35	0.2-0.6	0.20-0.24	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	8-40	1-7	55-72	25-35	1.25-1.45	0.2-0.6	0.16-0.22	3.0-5.9	0.2-0.8	.37	.37			
	40-58	1-7	68-80	18-27	1.30-1.50	0.2-0.6	0.18-0.22	0.0-2.9	0.2-0.8	.49	.49			
	58-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.5	.37	.37			
515D3:														
Bunkum	0-8	1-7	55-72	27-35	1.25-1.35	0.2-0.6	0.20-0.24	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	8-40	1-7	55-72	25-35	1.25-1.45	0.2-0.6	0.16-0.22	3.0-5.9	0.2-0.8	.37	.37			
	40-58	1-7	68-80	18-27	1.30-1.50	0.2-0.6	0.18-0.22	0.0-2.9	0.2-0.8	.49	.49			
	58-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.5	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
517A:														
Marine--------------	0-9	1-7	75-85	12-18	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	3	5	56
	9-17	1-7	75-90	8-18	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	0.1-0.5	.49	.49			
	17-34	1-7	45-64	35-48	1.45-1.70	0.06-0.2	0.11-0.18	6.0-8.9	0.2-0.8	.37	.37			
	34-62	1-7	60-80	15-35	1.45-1.65	0.2-0.6	0.18-0.22	3.0-5.9	0.1-0.5	.37	.37			
	62-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.3	.37	.37			
517B:														
Marine--------------	0-9	1-7	75-85	12-18	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	3	5	56
	9-17	1-7	75-90	8-18	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	0.1-0.5	.49	.49			
	17-34	1-7	45-64	35-48	1.45-1.70	0.06-0.2	0.11-0.18	6.0-8.9	0.2-0.8	.37	.37			
	34-62	1-7	60-80	15-35	1.45-1.65	0.2-0.6	0.18-0.22	3.0-5.9	0.1-0.5	.37	.37			
	62-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.3	.37	.37			
582B:														
Homen---------------	0-9	1-7	66-80	18-27	1.20-1.65	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-15	1-7	66-80	15-27	1.35-1.65	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
	15-58	1-7	58-75	24-35	1.40-1.70	0.2-0.6	0.18-0.22	3.0-5.9	0.1-0.5	.37	.37			
	58-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.3	.37	.37			
582B2:														
Homen---------------	0-7	1-7	66-80	18-27	1.20-1.65	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-50	1-7	58-75	24-35	1.40-1.70	0.2-0.6	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	50-80	5-30	45-70	20-30	1.40-1.70	0.2-0.6	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
582C2:														
Homen---------------	0-7	1-7	66-80	18-27	1.20-1.65	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-50	1-7	58-75	24-35	1.40-1.70	0.2-0.6	0.18-0.22	3.0-5.9	0.1-0.5	.37	.37			
	50-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.3	.37	.37			
657A:														
Burksville----------	0-7	1-7	65-85	12-27	1.35-1.50	0.2-0.6	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	7-13	1-7	65-85	12-25	1.40-1.55	0.06-0.2	0.20-0.22	0.0-2.9	0.1-0.5	.55	.55			
	13-54	1-7	58-73	25-35	1.45-1.65	0.06-0.2	0.11-0.14	3.0-5.9	0.2-0.8	.37	.37			
	54-80	1-7	60-80	18-35	1.55-1.75	0.06-0.2	0.10-0.15	3.0-5.9	0.1-0.5	.49	.49			
658F:														
Sonsac--------------	0-3	5-15	60-80	12-27	1.30-1.50	0.06-0.6	0.12-0.18	3.0-5.9	1.0-3.0	.28	.32	3	5	56
	3-6	5-15	54-70	20-35	1.40-1.55	0.06-0.6	0.10-0.15	3.0-5.9	0.2-0.8	.17	.20			
	6-24	1-20	30-50	40-60	1.45-1.65	0.06-0.2	0.08-0.13	6.0-8.9	0.1-0.5	.17	.20			
	24-28	---	---	---	---	---	---	---	---	---	---			
785G:														
Lacrescent----------	0-14	5-40	42-70	18-27	1.25-1.40	0.6-2	0.15-0.22	0.0-2.9	3.0-5.0	.32	.37	5	8	56
	14-32	15-60	34-60	8-24	1.30-1.50	0.6-6	0.06-0.09	0.0-2.9	0.5-2.0	.43	.49			
	32-60	15-60	38-60	8-20	1.30-1.50	2-6	0.05-0.08	0.0-2.9	0.1-0.5	.37	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
801D:														
Orthents, silty-----	0-60	1-7	68-80	18-27	1.35-1.55	0.2-2	0.18-0.22	3.0-5.9	0.5-1.0	.43	.43	5	6	48
802D:														
Orthents, loamy-----	0-6	30-50	31-45	18-27	1.70-1.75	0.2-0.6	0.18-0.22	3.0-5.9	0.5-1.0	.32	.32	5	4	86
	6-60	30-50	28-40	22-30	1.70-1.80	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.32	.32			
864.														
Pits, quarries														
878C3:														
Coulterville--------	0-5	1-7	55-70	27-35	1.35-1.55	0.2-0.6	0.14-0.19	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	5-20	1-7	55-75	22-35	1.40-1.60	0.06-0.2	0.14-0.24	3.0-5.9	0.2-0.8	.37	.37			
	20-48	1-7	60-80	15-35	1.45-1.60	0.06-0.2	0.10-0.15	3.0-5.9	0.2-0.8	.49	.49			
	48-80	5-30	45-70	15-30	1.40-1.60	0.2-0.6	0.05-0.10	0.0-2.9	0.1-0.5	.37	.37			
Grantfork-----------	0-5	5-20	45-65	27-35	1.35-1.55	0.2-0.6	0.15-0.18	0.0-2.9	0.5-1.0	.37	.37	4	7	38
	5-37	10-35	35-55	20-35	1.40-1.60	0.2-0.6	0.15-0.20	0.0-2.9	0.1-0.4	.37	.37			
	37-67	15-45	35-55	18-35	1.65-1.80	0.2-0.6	0.15-0.20	0.0-2.9	0.1-0.3	.37	.37			
	67-80	15-40	30-50	24-48	1.65-1.80	0.06-0.2	0.07-0.10	3.0-5.9	0.1-0.2	.28	.28			
880B2:														
Coulterville--------	0-7	1-7	70-80	15-27	1.40-1.60	0.2-0.6	0.21-0.24	0.0-2.9	1.0-2.0	.43	.43	4	6	48
	7-23	1-7	55-75	22-35	1.40-1.60	0.06-0.2	0.14-0.24	3.0-5.9	0.2-0.8	.37	.37			
	23-68	1-7	60-80	15-35	1.45-1.60	0.06-0.2	0.10-0.15	3.0-5.9	0.2-0.8	.49	.49			
	68-80	5-30	45-70	15-30	1.40-1.60	0.2-0.6	0.05-0.10	0.0-2.9	0.1-0.5	.37	.37			
Darmstadt-----------	0-11	1-7	72-80	12-27	1.30-1.50	0.06-0.2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	3	6	48
	11-21	1-7	55-70	27-35	1.40-1.65	0.06-0.2	0.11-0.20	3.0-5.9	0.2-0.8	.37	.37			
	21-39	1-7	60-75	20-35	1.40-1.65	0.01-0.06	0.11-0.20	3.0-5.9	0.2-0.8	.37	.37			
	39-62	1-7	65-80	20-30	1.40-1.60	0.06-0.2	0.10-0.15	3.0-5.9	0.1-0.5	.49	.49			
	62-80	5-30	45-70	20-30	1.40-1.60	0.06-0.2	0.10-0.15	0.0-2.9	0.1-0.3	.37	.37			
882A:														
Oconee--------------	0-8	1-7	66-78	20-27	1.20-1.30	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	8-16	1-7	66-80	18-27	1.30-1.45	0.06-0.2	0.20-0.22	3.0-5.9	0.1-0.5	.49	.49			
	16-47	1-7	51-63	35-42	1.30-1.50	0.06-0.2	0.11-0.17	6.0-8.9	0.2-0.8	.37	.37			
	47-65	1-7	58-78	20-35	1.40-1.60	0.06-0.2	0.16-0.21	3.0-5.9	0.2-0.8	.37	.37			
	65-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.5	.37	.37			
Darmstadt-----------	0-11	1-7	72-80	12-27	1.30-1.50	0.06-0.2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	3	6	48
	11-21	1-7	55-70	27-35	1.40-1.65	0.06-0.2	0.11-0.20	3.0-5.9	0.2-0.8	.37	.37			
	21-39	1-7	60-75	20-35	1.40-1.65	0.01-0.06	0.11-0.20	3.0-5.9	0.2-0.8	.37	.37			
	39-62	1-7	65-80	20-30	1.40-1.60	0.06-0.2	0.10-0.15	3.0-5.9	0.1-0.5	.49	.49			
	62-80	5-30	45-70	20-30	1.40-1.60	0.06-0.2	0.10-0.15	0.0-2.9	0.1-0.3	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
882A:														
Coulterville--------	0-7	1-7	70-80	15-27	1.40-1.60	0.2-0.6	0.21-0.24	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	7-23	1-7	60-75	22-35	1.40-1.60	0.06-0.2	0.14-0.24	3.0-5.9	0.2-0.8	.37	.37			
	23-56	1-7	60-80	15-35	1.45-1.60	0.06-0.2	0.10-0.15	3.0-5.9	0.2-0.8	.49	.49			
	56-80	5-30	45-70	15-30	1.40-1.60	0.2-0.6	0.05-0.10	0.0-2.9	0.1-0.5	.37	.37			
882B:														
Oconee--------------	0-8	1-7	66-78	20-27	1.20-1.30	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	8-16	1-7	66-80	18-27	1.30-1.45	0.06-0.2	0.20-0.22	3.0-5.9	0.1-0.5	.49	.49			
	16-47	1-7	51-63	35-42	1.30-1.50	0.06-0.2	0.11-0.17	6.0-8.9	0.2-0.8	.37	.37			
	47-65	1-7	58-78	20-35	1.40-1.60	0.06-0.2	0.16-0.21	3.0-5.9	0.1-0.5	.37	.37			
	65-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.3	.37	.37			
Coulterville--------	0-7	1-7	70-80	15-27	1.40-1.60	0.2-0.6	0.21-0.24	0.0-2.9	1.0-2.0	.43	.43	4	6	48
	7-23	1-7	60-75	22-35	1.40-1.60	0.06-0.2	0.14-0.24	3.0-5.9	0.2-0.8	.37	.37			
	23-68	1-7	60-80	15-35	1.45-1.60	0.06-0.2	0.10-0.15	3.0-5.9	0.2-0.8	.49	.49			
	68-80	5-30	45-70	15-30	1.40-1.60	0.2-0.6	0.05-0.10	0.0-2.9	0.1-0.5	.37	.37			
Darmstadt-----------	0-11	1-7	72-80	12-27	1.30-1.50	0.06-0.2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	3	6	48
	11-21	1-7	55-70	27-35	1.40-1.65	0.06-0.2	0.11-0.20	3.0-5.9	0.2-0.8	.37	.37			
	21-39	1-7	60-75	20-35	1.40-1.65	0.01-0.06	0.11-0.20	3.0-5.9	0.2-0.8	.37	.37			
	39-62	1-7	65-80	20-30	1.40-1.60	0.06-0.2	0.10-0.15	3.0-5.9	0.1-0.5	.49	.49			
	62-80	5-30	45-70	20-30	1.40-1.60	0.06-0.2	0.10-0.15	0.0-2.9	0.1-0.3	.37	.37			
884B2:														
Bunkum--------------	0-8	1-7	68-80	18-27	1.25-1.35	0.2-0.6	0.20-0.24	3.0-5.9	1.0-2.0	.43	.43	5	7	48
	8-44	1-7	58-72	25-35	1.25-1.45	0.2-0.6	0.16-0.22	3.0-5.9	0.2-0.8	.37	.37			
	44-62	1-7	68-80	18-27	1.30-1.50	0.2-0.6	0.18-0.22	0.0-2.9	0.1-0.5	.49	.49			
	62-80	5-30	45-70	20-30	1.30-1.55	0.2-0.6	0.18-0.22	0.0-2.9	0.1-0.3	.37	.37			
Coulterville--------	0-7	1-7	70-80	15-27	1.40-1.60	0.2-0.6	0.21-0.24	0.0-2.9	1.0-2.0	.43	.43	4	6	48
	7-23	1-7	60-75	22-35	1.40-1.60	0.06-0.2	0.14-0.24	3.0-5.9	0.2-0.8	.37	.37			
	23-56	1-7	60-80	15-35	1.45-1.60	0.06-0.2	0.10-0.15	3.0-5.9	0.2-0.8	.49	.49			
	56-80	5-30	45-70	15-30	1.40-1.60	0.2-0.6	0.05-0.10	0.0-2.9	0.1-0.5	.37	.37			
884C3:														
Bunkum--------------	0-8	1-7	55-72	27-35	1.25-1.35	0.2-0.6	0.20-0.24	3.0-5.9	0.5-1.0	.37	.37	5	7	38
	8-40	1-7	58-72	25-35	1.25-1.45	0.2-0.6	0.16-0.22	3.0-5.9	0.2-0.8	.37	.37			
	40-58	1-7	68-80	18-27	1.30-1.50	0.2-0.6	0.18-0.22	0.0-2.9	0.1-0.5	.49	.49			
	58-80	5-30	45-70	20-30	1.30-1.55	0.2-0.6	0.18-0.22	0.0-2.9	0.1-0.3	.37	.37			
Coulterville--------	0-5	1-7	60-70	27-35	1.35-1.55	0.2-0.6	0.14-0.19	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	5-20	1-7	60-75	22-35	1.40-1.60	0.06-0.2	0.14-0.24	3.0-5.9	0.2-0.8	.37	.37			
	20-48	1-7	60-80	15-35	1.45-1.60	0.06-0.2	0.10-0.15	3.0-5.9	0.2-0.8	.49	.49			
	48-80	5-30	45-70	15-30	1.40-1.60	0.2-0.6	0.05-0.10	0.0-2.9	0.1-0.5	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
886F:														
Ruma----------------	0-8	1-7	64-78	20-27	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-56	1-7	61-75	22-35	1.25-1.40	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	56-80	5-30	45-70	20-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
Ursa----------------	0-7	1-15	65-80	18-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	7-60	10-40	20-55	35-55	1.50-1.70	0.06-0.2	0.09-0.17	6.0-8.9	0.2-0.8	.28	.28			
	60-80	15-45	25-45	25-45	1.55-1.75	0.06-0.2	0.08-0.17	3.0-5.9	0.1-0.5	.28	.28			
886F3:														
Ruma----------------	0-5	1-7	55-72	27-35	1.20-1.30	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37	5	6	48
	5-48	1-7	61-75	22-35	1.25-1.40	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	48-80	5-30	45-70	20-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
Ursa----------------	0-3	5-20	40-60	30-40	1.40-1.60	0.2-0.6	0.11-0.19	3.0-5.9	0.5-1.0	.28	.28	2	4	86
	3-68	10-40	20-55	35-55	1.50-1.70	0.06-0.2	0.09-0.17	6.0-8.9	0.2-0.8	.28	.28			
	68-80	15-45	25-45	25-45	1.55-1.75	0.06-0.2	0.08-0.17	3.0-5.9	0.1-0.5	.28	.28			
897D3:														
Bunkum--------------	0-7	1-7	55-72	27-35	1.25-1.35	0.2-0.6	0.20-0.24	3.0-5.9	0.5-1.0	.37	.37	4	7	38
	7-40	1-7	58-72	25-35	1.25-1.45	0.2-0.6	0.16-0.22	3.0-5.9	0.2-0.8	.37	.37			
	40-58	1-7	68-80	18-27	1.30-1.50	0.2-0.6	0.18-0.22	0.0-2.9	0.2-0.8	.49	.49			
	58-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.5	.37	.37			
Atlas---------------	0-7	5-20	40-60	30-40	1.35-1.55	0.06-0.2	0.14-0.19	6.0-8.9	0.5-1.0	.28	.28	2	7	38
	7-31	10-35	25-45	35-45	1.35-1.55	0.01-0.06	0.07-0.19	6.0-8.9	0.1-0.5	.28	.28			
	31-51	10-35	25-45	30-50	1.35-1.55	0.01-0.06	0.07-0.19	6.0-8.9	0.1-0.5	.28	.28			
	51-80	15-40	20-50	25-45	1.35-1.60	0.06-0.2	0.07-0.18	3.0-5.9	0.1-0.5	.28	.28			
907D3:														
Redbud--------------	0-5	1-7	55-70	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37	5	7	38
	5-40	1-7	60-75	22-35	1.35-1.60	0.2-0.6	0.16-0.20	3.0-5.9	0.2-0.6	.37	.37			
	40-80	5-15	40-60	24-55	1.35-1.60	0.06-0.2	0.10-0.18	6.0-8.9	0.1-0.5	.37	.37			
Colp----------------	0-5	1-10	50-70	27-35	1.35-1.55	0.2-0.6	0.14-0.19	3.0-5.9	0.5-1.0	.32	.32	5	7	38
	5-70	5-15	40-60	35-50	1.45-1.70	0.06-0.2	0.10-0.17	6.0-8.9	0.1-0.5	.32	.32			
	70-80	5-15	40-60	30-45	1.50-1.70	0.06-0.2	0.10-0.18	6.0-8.9	0.1-0.5	.37	.37			
988F:														
Westmore------------	0-10	2-12	64-80	15-27	1.35-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	10-22	2-12	56-70	25-35	1.40-1.60	0.6-2	0.17-0.21	3.0-5.9	0.2-0.8	.43	.43			
	22-60	5-20	30-50	35-60	1.40-1.70	0.06-0.6	0.10-0.14	6.0-8.9	0.1-0.3	.28	.32			
Neotoma-------------	0-3	5-25	66-80	6-16	1.20-1.45	0.6-6	0.10-0.20	0.0-2.9	1.0-3.0	.28	.32	5	8	48
	3-50	10-60	15-65	10-25	1.30-1.60	0.6-6	0.09-0.16	0.0-2.9	0.2-0.8	.37	.43			
	50-60	10-60	15-65	6-20	1.25-1.50	2-6	0.02-0.09	0.0-2.9	0.1-0.3	.32	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
993A:														
Cowden--------------	0-8	1-7	68-80	17-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	3	6	48
	8-19	1-7	68-80	17-27	1.25-1.45	0.06-0.2	0.18-0.20	0.0-2.9	0.1-0.5	.49	.49			
	19-50	1-7	50-63	35-42	1.35-1.60	0.06-0.2	0.12-0.20	6.0-8.9	0.2-0.8	.37	.37			
	50-58	1-7	65-80	20-30	1.40-1.60	0.2-0.6	0.17-0.22	3.0-5.9	0.1-0.5	.49	.49			
	58-80	5-30	45-70	20-30	1.40-1.60	0.2-0.6	0.17-0.22	0.0-2.9	0.1-0.3	.37	.37			
Piasa---------------	0-8	1-7	66-80	18-27	1.25-1.45	0.2-0.6	0.22-0.24	3.0-5.9	2.0-4.0	.37	.37	3	6	48
	8-12	1-7	66-80	18-27	1.30-1.50	0.06-0.2	0.18-0.20	3.0-5.9	0.2-0.8	.49	.49			
	12-48	1-7	50-63	35-43	1.35-1.55	0.01-0.06	0.09-0.10	6.0-8.9	0.2-0.8	.37	.37			
	48-80	5-30	45-70	20-30	1.40-1.60	0.06-0.2	0.10-0.12	0.0-2.9	0.1-0.5	.37	.37			
1071A:														
Darwin, undrained---	0-20	1-10	40-58	40-55	1.20-1.40	0.01-0.06	0.11-0.14	9.0-25.0	4.0-6.0	.24	.24	5	4	86
	20-64	1-10	35-50	45-60	1.30-1.50	0.01-0.06	0.11-0.14	9.0-25.0	0.5-1.5	.28	.28			
	64-80	5-15	35-60	30-55	1.40-1.60	0.06-0.2	0.10-0.20	6.0-8.9	0.2-0.8	.28	.28			
1457A:														
Booker, undrained---	0-16	1-5	25-38	60-70	1.30-1.50	0.01-0.06	0.12-0.14	9.0-25.0	3.0-5.0	.24	.24	5	4	86
	16-60	1-10	20-35	60-75	1.30-1.45	0.01-0.06	0.09-0.11	9.0-25.0	0.5-2.0	.28	.28			
1591A:														
Fults, undrained----	0-13	1-10	35-55	40-55	1.20-1.40	0.01-0.06	0.19-0.21	6.0-8.9	3.0-4.0	.24	.24	5	4	86
	13-20	1-15	30-50	35-60	1.30-1.50	0.01-0.06	0.11-0.18	6.0-8.9	0.5-1.0	.28	.28			
	20-56	10-60	25-50	15-35	1.40-1.70	0.6-2	0.12-0.20	3.0-5.9	0.2-0.8	.32	.32			
	56-70	20-90	10-45	3-30	1.60-1.80	0.6-6	0.05-0.18	0.0-2.9	0.1-0.5	.24	.24			
3092B:														
Sarpy---------------	0-9	85-95	1-10	2-5	1.20-1.50	6-20	0.05-0.09	0.0-2.9	0.5-1.0	.15	.15	5	1	250
	9-60	80-95	2-10	2-5	1.20-1.50	6-20	0.05-0.09	0.0-2.9	0.1-0.5	.15	.15			
3226A:														
Wirt----------------	0-13	5-30	60-80	10-18	1.30-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	13-33	10-50	45-70	6-18	1.40-1.55	0.6-2	0.11-0.20	0.0-2.9	0.2-0.8	.49	.49			
	33-60	20-80	20-50	4-18	1.45-1.60	0.6-2	0.07-0.19	0.0-2.9	0.1-0.5	.24	.28			
3288L:														
Petrolia------------	0-8	5-20	50-65	27-35	1.20-1.40	0.2-0.6	0.21-0.23	3.0-5.9	1.0-3.0	.32	.32	5	7	38
	8-55	5-15	50-65	27-35	1.35-1.45	0.2-0.6	0.18-0.20	3.0-5.9	0.2-1.0	.32	.32			
	55-80	5-25	50-65	20-35	1.40-1.60	0.2-0.6	0.18-0.20	3.0-5.9	0.1-0.5	.32	.32			
3333A:														
Wakeland------------	0-8	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-68	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.2-0.8	.55	.55			
	68-80	5-45	45-70	10-20	1.30-1.50	0.6-2	0.18-0.24	0.0-2.9	0.1-0.5	.55	.55			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
3333L:														
Wakeland------------	0-8	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-68	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.2-0.8	.55	.55			
	68-80	5-45	45-70	10-20	1.30-1.50	0.6-2	0.18-0.24	0.0-2.9	0.1-0.5	.55	.55			
3334L:														
Birds---------------	0-8	5-15	60-75	15-25	1.30-1.50	0.2-0.6	0.21-0.25	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-63	5-15	60-75	18-27	1.30-1.50	0.2-0.6	0.21-0.25	0.0-2.9	0.2-0.8	.49	.49			
	63-80	5-25	55-70	15-30	1.40-1.60	0.2-0.6	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
3336A:														
Wilbur--------------	0-7	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-41	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.2-0.8	.49	.49			
	41-65	5-45	45-70	10-26	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
3391A:														
Blake---------------	0-6	5-15	50-65	27-38	1.25-1.30	0.6-2	0.20-0.22	3.0-5.9	1.0-3.0	.32	.32	5	4L	86
	6-33	10-20	50-65	22-35	1.25-1.30	0.6-2	0.20-0.22	3.0-5.9	0.2-0.8	.32	.32			
	33-60	20-60	30-60	10-20	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.55	.55			
3394B:														
Haynie--------------	0-8	20-40	40-60	15-25	1.20-1.35	0.6-2	0.18-0.23	0.0-2.9	1.0-3.0	.37	.37	5	4L	86
	8-42	20-55	40-60	15-18	1.20-1.35	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.24	.24			
	42-60	20-80	20-50	10-20	1.20-1.35	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.24	.24			
3646A:														
Fluvaquents, loamy--	0-10	30-60	30-45	12-24	1.25-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	10-60	40-70	20-40	6-24	1.30-1.55	0.6-2	0.06-0.17	0.0-2.9	0.2-0.8	.24	.24			
3847L:														
Fluvaquents---------	0-10	30-60	30-45	12-24	1.25-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	10-60	40-70	20-40	6-24	1.30-1.55	0.6-2	0.06-0.17	0.0-2.9	0.2-0.8	.24	.24			
Orthents------------	0-6	30-50	31-45	18-27	1.70-1.75	0.2-0.6	0.18-0.22	3.0-5.9	0.5-2.0	.32	.32	5	4	86
	6-60	30-50	28-40	22-30	1.70-1.80	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.32	.32			
5079B:														
Menfro, karst-------	0-7	1-7	68-80	18-27	1.25-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-56	1-7	62-70	24-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	56-80	1-7	68-80	15-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.55	.55			
5079C:														
Menfro, karst-------	0-5	1-7	68-80	18-27	1.25-1.40	0.6-2	0.22-0.24	0.0-2.9	0.5-1.0	.37	.37	5	6	48
	5-50	1-7	62-70	24-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	50-80	1-7	68-80	15-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
5079D:														
Menfro, karst-------	0-5	1-7	68-80	18-27	1.25-1.40	0.6-2	0.22-0.24	0.0-2.9	0.5-1.0	.37	.37	5	6	48
	5-50	1-7	62-70	24-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	50-80	1-7	68-80	15-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
5079G:														
Menfro, karst-------	0-9	1-7	68-80	18-27	1.25-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-52	1-7	62-70	24-35	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-0.8	.37	.37			
	52-80	1-7	68-80	15-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
5491C:														
Ruma, karst---------	0-5	1-7	55-72	27-35	1.20-1.30	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37	5	6	48
	5-48	1-7	61-75	22-35	1.25-1.40	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	48-80	5-30	45-70	20-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
5491D:														
Ruma, karst---------	0-5	1-7	55-72	27-35	1.20-1.30	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37	5	6	48
	5-48	1-7	61-75	22-35	1.25-1.40	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	48-80	5-30	45-70	20-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
5491G:														
Ruma, karst---------	0-7	1-7	68-80	18-27	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-45	1-7	61-75	22-35	1.25-1.40	0.6-2	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	45-80	5-30	45-70	20-30	1.30-1.45	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
5582B:														
Homen, karst--------	0-9	1-7	66-80	18-27	1.20-1.65	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-15	1-7	66-80	15-27	1.35-1.65	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
	15-58	1-7	58-75	24-35	1.40-1.70	0.2-0.6	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	58-80	5-30	45-70	20-30	1.40-1.70	0.2-0.6	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
5582C:														
Homen, karst--------	0-7	1-7	66-80	18-27	1.20-1.65	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-50	1-7	58-75	24-35	1.40-1.70	0.2-0.6	0.18-0.22	3.0-5.9	0.2-0.8	.37	.37			
	50-80	5-30	45-70	20-30	1.40-1.70	0.2-0.6	0.20-0.22	0.0-2.9	0.1-0.5	.37	.37			
7430A:														
Raddle--------------	0-20	5-15	60-75	18-24	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	20-65	5-15	60-75	18-24	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	0.5-2.0	.49	.49			
	65-80	5-25	55-70	15-27	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-1.0	.49	.49			
8038B:														
Rocher--------------	0-5	30-50	40-55	10-18	1.55-1.75	2-6	0.20-0.24	0.0-2.9	0.5-1.0	.32	.32	5	4L	86
	5-53	50-90	10-26	6-18	1.65-1.85	2-6	0.12-0.17	0.0-2.9	0.2-0.8	.24	.24			
	53-62	50-90	10-30	2-16	1.50-1.90	2-6	0.05-0.10	0.0-2.9	0.1-0.5	.24	.24			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
8070A:														
Beaucoup	0-16	1-15	55-70	27-35	1.15-1.35	0.6-2	0.15-0.20	3.0-5.9	5.0-6.0	.28	.28	5	7	38
	16-64	1-15	55-70	27-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32			
	64-80	5-50	45-70	10-30	1.40-1.65	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.32	.32			
8071L:														
Darwin	0-16	1-10	40-58	40-55	1.20-1.40	0.01-0.06	0.11-0.14	9.0-25.0	4.0-5.0	.24	.24	5	4	86
	16-62	1-10	35-50	45-60	1.30-1.50	0.01-0.06	0.11-0.14	9.0-25.0	0.5-1.5	.28	.28			
	62-80	5-15	35-60	30-55	1.40-1.60	0.06-0.2	0.10-0.20	6.0-8.9	0.2-0.8	.28	.28			
8078A:														
Arenzville	0-31	1-10	70-85	12-18	1.20-1.55	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	31-56	1-10	60-80	15-30	1.25-1.45	0.6-2	0.18-0.22	3.0-5.9	2.0-4.0	.49	.49			
	56-70	5-15	55-75	15-30	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	0.2-0.8	.49	.49			
8084A:														
Okaw	0-7	1-10	60-80	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	3	6	48
	7-15	1-10	60-80	12-30	1.30-1.50	0.2-0.6	0.18-0.20	0.0-2.9	0.1-0.5	.49	.49			
	15-54	5-15	30-50	40-60	1.35-1.60	0.01-0.06	0.09-0.18	6.0-8.9	0.1-0.5	.32	.32			
	54-80	5-15	30-60	35-55	1.50-1.70	0.01-0.06	0.08-0.20	6.0-8.9	0.1-0.5	.37	.37			
8122B:														
Colp	0-8	1-10	60-78	20-27	1.30-1.50	0.2-0.6	0.21-0.25	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-12	1-10	60-80	18-25	1.30-1.55	0.2-0.6	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
	12-70	5-15	40-60	35-60	1.45-1.70	0.06-0.2	0.10-0.17	6.0-8.9	0.1-0.5	.32	.32			
	70-80	5-15	40-60	30-45	1.50-1.70	0.06-0.2	0.10-0.18	6.0-8.9	0.1-0.5	.37	.37			
8122C:														
Colp	0-5	1-10	50-70	27-35	1.35-1.55	0.2-0.6	0.14-0.19	3.0-5.9	0.5-1.0	.32	.32	5	7	38
	5-70	5-15	40-60	35-60	1.45-1.70	0.06-0.2	0.10-0.17	6.0-8.9	0.1-0.5	.32	.32			
	70-80	5-15	40-60	30-45	1.50-1.70	0.06-0.2	0.10-0.18	6.0-8.9	0.1-0.5	.37	.37			
8180A:														
Dupo	0-9	1-10	70-85	12-18	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-25	1-10	70-85	10-18	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.55	.55			
	25-80	1-10	35-60	35-55	1.35-1.60	0.06-0.2	0.08-0.19	6.0-8.9	1.0-4.0	.28	.28			
8183A:														
Shaffton	0-10	20-45	30-50	27-35	1.45-1.55	0.6-2	0.20-0.22	3.0-5.9	2.0-4.0	.24	.24	5	6	48
	10-21	30-50	30-40	18-32	1.55-1.65	0.6-2	0.17-0.19	3.0-5.9	0.5-1.0	.28	.28			
	21-43	40-75	10-30	15-27	1.65-1.70	6-20	0.05-0.08	0.0-2.9	0.2-0.8	.24	.24			
	43-60	30-90	10-55	2-18	1.45-1.50	0.6-2	0.17-0.19	3.0-5.9	0.1-0.5	.32	.32			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
8284A:														
Tice----------------	0-16	1-15	55-70	27-35	1.25-1.45	0.6-2	0.21-0.24	3.0-5.9	2.0-4.0	.28	.28	5	7	38
	16-72	1-15	55-75	22-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-1.0	.32	.32			
	72-80	5-50	45-70	10-35	1.40-1.60	0.6-2	0.14-0.21	3.0-5.9	0.1-0.5	.32	.32			
8302A:														
Ambraw--------------	0-11	5-25	45-65	27-39	1.25-1.45	0.6-2	0.15-0.19	3.0-5.9	3.0-4.0	.28	.28	5	7	38
	11-21	20-40	25-50	25-42	1.30-1.55	0.2-0.6	0.08-0.19	3.0-5.9	0.5-2.0	.28	.28			
	21-34	20-60	20-40	20-35	1.40-1.65	0.2-2	0.10-0.15	3.0-5.9	0.5-1.0	.28	.28			
	34-60	20-70	20-35	10-30	1.35-1.65	0.2-2	0.11-0.22	0.0-2.9	0.2-0.8	.24	.24			
8304B:														
Landes--------------	0-14	50-75	15-40	7-20	1.40-1.60	2-6	0.13-0.20	0.0-2.9	2.0-3.0	.20	.20	4	3	86
	14-39	40-80	15-40	5-18	1.60-1.70	2-6	0.10-0.15	0.0-2.9	0.5-1.0	.24	.24			
	39-80	40-90	5-55	5-18	1.60-1.80	6-20	0.05-0.15	0.0-2.9	0.1-0.5	.24	.24			
8333A:														
Wakeland------------	0-8	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-68	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.2-0.8	.55	.55			
	68-80	5-45	45-70	10-20	1.30-1.50	0.6-2	0.18-0.24	0.0-2.9	0.1-0.5	.55	.55			
8336A:														
Wilbur--------------	0-7	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-41	5-15	70-80	10-18	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	0.2-0.8	.49	.49			
	41-65	5-45	45-70	10-26	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
8338B:														
Hurst---------------	0-6	1-15	60-78	20-27	1.25-1.45	0.2-0.6	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	3	6	48
	6-10	1-15	60-78	18-30	1.45-1.70	0.2-0.6	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
	10-56	1-15	35-60	35-55	1.50-1.70	0.01-0.06	0.10-0.17	6.0-8.9	0.1-0.5	.32	.32			
	56-80	5-20	45-65	27-45	1.50-1.70	0.01-0.06	0.10-0.18	6.0-8.9	0.1-0.5	.37	.37			
8394B:														
Haynie--------------	0-8	20-40	40-60	15-25	1.20-1.35	0.6-2	0.18-0.23	0.0-2.9	1.0-3.0	.37	.37	5	4L	86
	8-42	20-50	40-60	15-18	1.20-1.35	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.24	.24			
	42-60	20-80	20-50	10-20	1.20-1.35	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.24	.24			
8436B:														
Meadowbank----------	0-17	5-15	60-75	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	4	6	48
	17-34	1-10	55-70	27-35	1.35-1.55	0.6-2	0.16-0.19	3.0-5.9	0.5-2.0	.37	.37			
	34-53	20-60	30-50	10-30	1.45-1.65	0.6-6	0.10-0.18	0.0-2.9	0.2-0.8	.32	.32			
	53-80	50-90	10-35	2-10	1.55-1.80	6-20	0.05-0.10	0.0-2.9	0.1-0.5	.24	.24			
8457L:														
Booker--------------	0-13	1-5	25-38	60-70	1.30-1.50	0.01-0.06	0.12-0.14	9.0-25.0	2.0-4.0	.24	.24	5	4	86
	13-60	1-10	20-35	60-75	1.30-1.45	0.01-0.06	0.09-0.11	9.0-25.0	0.5-2.0	.28	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
8591A:														
Fults---------------	0-12	1-10	35-55	40-55	1.20-1.40	0.01-0.06	0.19-0.21	6.0-8.9	3.0-4.0	.24	.24	5	4	86
	12-32	5-15	34-50	35-60	1.30-1.50	0.01-0.06	0.11-0.18	6.0-8.9	0.5-1.0	.28	.28			
	32-42	10-60	25-50	15-35	1.40-1.70	0.6-2	0.12-0.20	3.0-5.9	0.2-0.8	.32	.32			
	42-60	20-90	10-45	3-30	1.60-1.80	0.6-6	0.05-0.18	0.0-2.9	0.1-0.5	.24	.24			
8592A:														
Nameoki-------------	0-12	1-10	30-58	40-55	1.20-1.40	0.01-0.06	0.12-0.21	6.0-8.9	3.0-4.0	.24	.24	5	4	86
	12-28	5-15	30-55	35-60	1.30-1.50	0.01-0.06	0.11-0.18	6.0-8.9	0.5-1.0	.28	.28			
	28-54	10-55	30-50	15-35	1.45-1.70	0.6-2	0.12-0.20	3.0-5.9	0.2-0.8	.32	.32			
	54-80	20-90	10-45	5-30	1.50-1.80	0.6-6	0.05-0.18	0.0-2.9	0.1-0.5	.24	.24			
8787A:														
Banlic--------------	0-8	1-15	70-85	12-18	1.40-1.60	0.2-0.6	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	8-21	1-15	70-85	12-18	1.40-1.60	0.06-0.2	0.20-0.22	0.0-2.9	0.2-0.8	.49	.49			
	21-55	1-15	70-85	10-18	1.65-1.90	0.06-0.2	0.10-0.11	0.0-2.9	0.1-0.5	.49	.49			
	55-77	5-15	70-80	12-18	1.50-1.70	0.2-0.6	0.05-0.08	0.0-2.9	0.1-0.3	.55	.55			
8812F:														
Typic Hapludalfs----	0-6	5-15	50-65	27-35	1.35-1.60	0.06-2	0.18-0.20	3.0-5.9	1.0-3.0	.28	.28	5	7	48
	6-60	10-40	40-60	10-45	1.45-1.80	0.06-6	0.08-0.16	3.0-5.9	0.1-0.5	.32	.32			

Table 21.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorption ratio
	In	pH	meq/100 g	Pct	
7D3:					
Atlas	0-9	4.5-7.3	19-26	0	0
	9-31	4.5-7.3	21-29	0	0
	31-51	4.5-7.8	18-29	0	0
	51-80	6.1-7.8	12-20	0-5	0
8F2:					
Hickory	0-12	4.5-7.3	14-19	0	0
	12-46	4.5-6.0	16-22	0	0
	46-58	5.1-7.3	9.0-19	0	0
	58-80	5.6-8.4	5.0-15	0-25	0
30F:					
Hamburg	0-7	6.6-8.4	4.0-8.0	0-30	0
	7-60	7.4-8.4	4.0-8.0	12-30	0
31A:					
Pierron	0-8	4.5-7.3	5.0-15	0	0
	8-20	4.5-7.3	5.0-10	0	0
	20-36	3.5-5.5	20-35	0	0
	36-66	4.5-6.5	15-30	0	0
	66-80	5.1-7.3	12-17	0	0
46A:					
Herrick	0-13	5.1-7.3	18-24	0	0
	13-39	4.5-6.0	21-25	0	0
	39-60	5.6-7.3	15-25	0	0
	60-80	5.6-7.8	12-17	0-10	0
50A:					
Virden	0-15	5.6-7.3	23-28	0	0
	15-74	5.6-7.3	21-27	0	0
	74-80	5.6-7.8	15-20	0-10	0
75B:					
Drury	0-7	5.6-7.8	8.0-16	0	0
	7-43	5.6-7.3	11-15	0	0
	43-80	6.1-7.8	9.0-12	0-15	0
75C:					
Drury	0-7	5.6-7.8	8.0-16	0	0
	7-43	5.6-7.3	11-15	0	0
	43-80	6.1-7.8	9.0-12	0-15	0
75D:					
Drury	0-6	5.6-7.8	8.0-16	0	0
	6-40	5.6-7.3	11-15	0	0
	40-80	6.1-7.8	9.0-12	0-15	0
75F:					
Drury	0-5	5.6-7.8	8.0-16	0	0
	5-40	5.6-7.3	11-15	0	0
	40-80	6.1-7.8	9.0-12	0-15	0
79B:					
Menfro	0-10	5.1-7.3	10-16	0	0
	10-62	4.5-7.3	15-20	0	0
	62-80	5.6-7.8	5.0-10	0-5	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorption ratio
	In	pH	meq/100 g	Pct	
79C2:					
Menfro	0-7	5.1-7.3	10-16	0	0
	7-56	4.5-7.3	15-20	0	0
	56-80	5.6-7.8	5.0-10	0-5	0
79D3:					
Menfro	0-5	5.1-7.3	16-20	0	0
	5-50	4.5-7.3	15-20	0	0
	50-80	5.6-7.8	5.0-10	0-5	0
79F:					
Menfro	0-9	5.1-7.3	10-16	0	0
	9-52	4.5-7.3	15-20	0	0
	52-80	5.6-7.8	5.0-10	0-5	0
79F3:					
Menfro	0-5	5.1-7.3	16-20	0	0
	5-50	4.5-7.3	15-20	0	0
	50-80	5.6-7.8	5.0-10	0-5	0
90A:					
Bethalto	0-8	5.6-7.3	16-24	0	0
	8-15	5.1-7.3	10-18	0	0
	15-70	5.1-7.8	15-28	0	0
	70-80	5.6-7.8	12-20	0-15	0
109A:					
Racoon	0-6	4.5-7.3	13-20	0	0
	6-26	4.5-7.3	11-17	0	0
	26-39	4.5-5.5	17-25	0	0
	39-47	4.5-6.0	17-23	0	0
	47-60	4.5-6.0	12-23	0	0
123.					
Riverwash					
216G:					
Stookey	0-6	4.5-7.3	14-22	0	0
	6-62	4.5-6.5	12-18	0	0
	62-80	5.6-8.4	8.0-16	0-5	0
267A:					
Caseyville	0-7	5.6-7.3	16-24	0	0
	7-16	5.1-6.5	10-18	0	0
	16-62	5.1-6.5	15-28	0	0
	62-80	5.6-7.8	12-20	0-15	0
267B:					
Caseyville	0-7	5.6-7.3	16-24	0	0
	7-16	5.1-6.5	10-18	0	0
	16-62	5.1-6.5	15-28	0	0
	62-80	5.6-7.8	12-20	0-15	0
423A:					
Millstadt	0-9	5.1-7.3	5.0-15	0	0
	9-18	4.5-7.3	5.0-10	0	0
	18-53	3.5-6.0	20-30	0	0
	53-80	4.5-7.8	15-35	0-5	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorption ratio
	In	pH	meq/100 g	Pct	
437B:					
Redbud----------	0-9	5.1-7.3	12-20	0	0
	9-16	5.1-7.3	10-18	0	0
	16-45	4.5-6.5	20-30	0	0
	45-80	4.5-8.4	18-32	0-5	0
438B:					
Aviston---------	0-16	5.6-7.3	15-25	0	0
	16-67	5.1-7.3	20-35	0	0
	67-80	5.6-7.8	10-20	0	0
438C2:					
Aviston---------	0-10	5.6-7.3	15-25	0	0
	10-57	5.1-7.3	20-35	0	0
	57-80	5.6-7.8	10-20	0	0
477B:					
Winfield--------	0-9	5.6-7.3	10-15	0	0
	9-13	5.6-7.3	12-17	0	0
	13-62	4.5-6.5	13-18	0	0
	62-80	5.1-7.3	10-14	0	0
477C2:					
Winfield--------	0-6	5.6-7.3	10-15	0	0
	6-50	4.5-6.5	13-18	0	0
	50-80	5.1-7.3	10-14	0	0
491B:					
Ruma------------	0-8	5.6-7.3	15-22	0	0
	8-56	4.5-6.5	18-28	0	0
	56-80	5.1-7.3	12-20	0	0
491C2:					
Ruma------------	0-6	5.6-7.3	15-22	0	0
	6-48	4.5-6.5	18-28	0	0
	48-80	5.1-7.3	12-20	0	0
491D3:					
Ruma------------	0-5	5.6-7.3	15-25	0	0
	5-48	4.5-6.5	18-28	0	0
	48-80	5.1-7.3	12-20	0	0
515C3:					
Bunkum----------	0-8	5.1-7.3	17-23	0	0
	8-40	4.5-6.5	18-24	0	0
	40-58	5.1-7.3	12-22	0	0
	58-80	5.1-7.3	12-17	0	0
515D3:					
Bunkum----------	0-8	5.1-7.3	17-23	0	0
	8-40	4.5-6.5	18-24	0	0
	40-58	5.1-7.3	12-22	0	0
	58-80	5.1-7.3	12-17	0	0
517A:					
Marine----------	0-9	5.1-7.3	9.0-15	0	0
	9-17	4.5-6.5	5.0-10	0	0
	17-34	4.5-5.5	20-30	0	0
	34-62	5.1-7.3	10-20	0	0
	62-80	5.6-7.8	12-17	0	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorp-tion ratio
	In	pH	meq/100 g	Pct	
517B:					
Marine----------	0-9	5.1-7.3	9.0-15	0	0
	9-17	4.5-6.5	5.0-10	0	0
	17-34	4.5-5.5	20-30	0	0
	34-62	5.1-7.3	10-20	0	0
	62-80	5.6-7.8	12-17	0	0
582B:					
Homen-----------	0-9	5.6-7.3	15-25	0	0
	9-15	4.5-6.5	15-22	0	0
	15-58	4.5-6.0	18-28	0	0
	58-80	5.1-6.5	12-17	0	0
582B2:					
Homen-----------	0-7	5.6-7.3	15-25	0	0
	7-50	4.5-6.0	18-28	0	0
	50-80	5.1-6.5	12-20	0	0
582C2:					
Homen-----------	0-7	5.6-7.3	15-25	0	0
	7-50	4.5-6.0	18-28	0	0
	50-80	5.1-6.5	12-17	0	0
657A:					
Burksville------	0-7	6.1-7.3	9.0-22	0	0-5
	7-13	6.1-7.8	6.0-17	0	5-15
	13-54	5.6-8.4	15-22	0-10	5-15
	54-80	6.6-8.4	11-22	0-20	5-15
658F:					
Sonsac----------	0-3	5.1-7.3	5.0-15	0	0
	3-6	5.1-7.3	11-24	0	0
	6-24	5.1-8.4	16-36	0-10	0
	24-28	---	---	---	---
785G:					
Lacrescent------	0-14	6.1-7.3	15-24	0	0
	14-32	6.1-7.8	5.0-16	0	0
	32-60	7.4-8.4	4.0-11	0-5	0
801D:					
Orthents, silty	0-60	5.1-6.5	8.0-20	0	0
802D:					
Orthents, loamy	0-6	5.6-7.3	9.0-12	0	0
	6-60	5.6-7.3	9.0-20	0	0
864.					
Pits, quarries					
878C3:					
Coulterville----	0-5	5.6-7.8	9.0-18	0	0-5
	5-20	4.5-7.8	16-22	0	5-15
	20-48	7.4-8.4	11-22	0-10	5-15
	48-80	6.6-8.4	9.0-19	0-20	5-15
Grantfork-------	0-5	4.5-7.8	17-20	0	0-10
	5-37	5.1-8.4	12-18	0-10	5-15
	37-67	7.4-9.0	12-18	0-30	5-15
	67-80	7.4-9.0	12-18	0-30	0-15

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorption ratio
	In	pH	meq/100 g	Pct	
880B2:					
Coulterville----	0-7	5.6-7.8	9.0-18	0	0-5
	7-23	4.5-7.8	16-22	0	5-15
	23-68	7.4-8.4	11-22	0-10	5-15
	68-80	6.6-8.4	12-17	0-20	5-15
Darmstadt-------	0-11	5.1-7.3	7.0-20	0	0-5
	11-21	4.5-7.8	16-23	0	5-15
	21-39	6.6-9.0	16-23	0-20	15-25
	39-62	7.4-9.0	12-17	0-30	5-25
	62-80	7.4-9.0	12-17	0-30	0-20
882A:					
Oconee----------	0-8	5.6-7.8	12-18	0	0
	8-16	4.5-7.3	10-18	0	0
	16-47	4.5-6.0	11-19	0	0
	47-65	5.1-6.5	12-21	0	0
	65-80	5.6-7.8	12-17	0	0
Darmstadt-------	0-11	5.1-7.3	7.0-20	0	0-5
	11-21	4.5-7.8	16-23	0	13-21
	21-39	6.6-9.0	16-23	0-20	15-25
	39-62	7.4-9.0	12-17	0-30	5-20
	62-80	7.4-9.0	12-17	0-30	5-20
Coulterville----	0-7	5.6-7.8	9.0-18	0	0-5
	7-23	4.5-7.8	16-22	0	5-15
	23-56	7.4-8.4	11-22	0-10	5-15
	56-80	6.6-8.4	12-17	0-20	5-15
882B:					
Oconee----------	0-8	5.6-7.8	12-18	0	0
	8-16	4.5-7.3	10-18	0	0
	16-47	4.5-6.0	21-27	0	0
	47-65	5.1-6.5	12-21	0	0
	65-80	5.6-7.8	12-17	0	0
Coulterville----	0-7	5.6-7.8	9.0-18	0	0-5
	7-23	4.5-7.8	16-22	0	5-15
	23-68	7.4-8.4	11-22	0-10	5-15
	68-80	6.6-8.4	12-17	0-20	5-15
Darmstadt-------	0-11	5.1-7.3	7.0-20	0	0-5
	11-21	4.5-7.8	16-23	0	13-21
	21-39	6.6-9.0	16-23	0-20	15-25
	39-62	7.4-9.0	12-17	0-30	5-20
	62-80	7.4-9.0	12-17	0-30	5-20
884B2:					
Bunkum----------	0-8	5.1-7.3	17-23	0	0
	8-44	4.5-6.5	18-24	0	0
	44-62	5.1-7.3	12-22	0	0
	62-80	5.1-7.3	12-17	0	0
Coulterville----	0-7	5.6-7.8	9.0-18	0	0-5
	7-23	4.5-7.8	16-22	0	5-15
	23-56	7.4-8.4	11-22	0-10	5-15
	56-80	6.6-8.4	9.0-19	0-20	5-15

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorption ratio
	In	pH	meq/100 g	Pct	
884C3:					
Bunkum----------	0-8	5.1-7.3	17-23	0	0
	8-40	4.5-6.5	18-24	0	0
	40-58	5.1-7.3	12-22	0	0
	58-80	5.1-7.3	12-17	0	0
Coulterville----	0-5	5.1-7.8	16-23	0	0-10
	5-20	4.5-7.8	16-22	0	5-15
	20-48	7.4-8.4	11-22	0-10	5-15
	48-80	6.6-8.4	9.0-19	0-20	5-15
886F:					
Ruma------------	0-8	5.6-7.3	15-22	0	0
	8-56	4.5-6.5	18-28	0	0
	56-80	5.1-7.3	12-20	0	0
Ursa------------	0-7	4.5-7.3	11-22	0	0
	7-60	4.5-7.3	21-27	0	0
	60-80	5.6-8.4	15-27	0-5	0
886F3:					
Ruma------------	0-5	5.6-7.3	15-25	0	0
	5-48	4.5-6.5	18-28	0	0
	48-80	5.1-7.3	12-20	0	0
Ursa------------	0-3	4.5-7.3	22-26	0	0
	3-68	4.5-7.3	21-27	0	0
	68-80	5.6-8.4	15-27	0-5	0
897D3:					
Bunkum----------	0-7	5.1-7.3	17-23	0	0
	7-40	4.5-6.5	18-24	0	0
	40-58	5.1-7.3	12-22	0	0
	58-80	5.1-7.3	12-17	0	0
Atlas-----------	0-7	4.5-7.3	19-26	0	0
	7-31	4.5-7.3	21-29	0	0
	31-51	4.5-7.8	18-29	0	0
	51-80	6.1-7.8	12-20	0-5	0
907D3:					
Redbud----------	0-5	5.1-7.3	16-22	0	0
	5-40	4.5-6.5	20-30	0	0
	40-80	4.5-8.4	18-32	0-5	0
Colp------------	0-5	5.1-7.3	17-23	0	0
	5-70	4.5-7.8	17-25	0-5	0
	70-80	4.5-8.4	18-28	0-15	0
988F:					
Westmore--------	0-10	5.1-7.3	10-20	0	0
	10-22	4.5-6.0	12-22	0	0
	22-60	5.1-7.8	20-30	0-5	0
Neotoma---------	0-3	5.1-6.5	8.0-22	0	0
	3-50	3.6-6.5	2.0-15	0	0
	50-60	4.5-6.0	1.0-12	0	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorption ratio
	In	pH	meq/100 g	Pct	
993A:					
Cowden----------	0-8	5.6-7.3	14-22	0	0
	8-19	4.5-6.0	10-17	0	0
	19-50	4.5-7.3	21-27	0	0
	50-58	5.6-7.8	8.0-19	0	0
	58-80	5.6-7.8	12-17	0	0
Piasa-----------	0-8	5.6-7.8	11-16	0	0-5
	8-12	5.6-7.8	11-16	0	0-5
	12-48	6.1-9.0	21-26	0-10	15-25
	48-80	6.6-8.4	12-17	0-30	5-20
1071A:					
Darwin, undrained------	0-20	6.1-7.8	32-37	0	0
	20-64	6.1-7.8	27-40	0-5	0
	64-80	6.6-8.4	18-34	0-15	0
1457A:					
Booker, undrained------	0-16	5.6-7.3	30-45	0	0
	16-60	5.6-7.3	40-60	0	0
1591A:					
Fults, undrained	0-13	5.6-7.8	30-44	0	0
	13-20	5.6-7.8	21-38	0	0
	20-56	5.6-7.8	6.0-20	0-5	0
	56-70	5.6-7.8	1.0-12	0-10	0
3092B:					
Sarpy-----------	0-9	6.6-8.4	2.0-8.0	0-15	0
	9-60	7.4-8.4	2.0-8.0	5-15	0
3226A:					
Wirt------------	0-13	5.6-7.3	6.0-13	0	0
	13-33	5.6-7.3	4.0-12	0	0
	33-60	5.6-7.3	3.0-12	0	0
3288L:					
Petrolia--------	0-8	5.6-7.8	20-25	0	0
	8-55	6.1-7.3	15-20	0	0
	55-80	5.1-7.8	10-20	0	0
3333A:					
Wakeland--------	0-8	5.6-7.3	4.0-12	0	0
	8-68	5.6-7.8	4.0-12	0	0
	68-80	5.6-7.8	4.0-12	0	0
3333L:					
Wakeland--------	0-8	5.6-7.3	4.0-12	0	0
	8-68	5.6-7.8	4.0-12	0	0
	68-80	5.6-7.8	4.0-12	0	0
3334L:					
Birds-----------	0-8	5.6-7.8	11-21	0	0
	8-63	5.6-7.8	11-21	0	0
	63-80	5.1-7.8	11-20	0	0
3336A:					
Wilbur----------	0-7	5.6-7.3	4.0-16	0	0
	7-41	5.6-7.8	4.0-15	0	0
	41-65	5.6-7.8	4.0-16	0	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorp-tion ratio
	In	pH	meq/100 g	Pct	
3391A:					
Blake-----------	0-6	7.4-8.4	25-35	0-20	0
	6-33	7.4-8.4	20-30	5-30	0
	33-60	7.4-8.4	10-20	5-30	0
3394B:					
Haynie----------	0-8	7.4-8.4	10-15	0-20	0
	8-42	7.4-8.4	9.0-12	5-30	0
	42-60	7.4-8.4	9.0-12	5-30	0
3646A:					
Fluvaquents, loamy----------	0-10	5.6-7.3	8.0-23	0	0
	10-60	5.6-7.8	2.0-19	0-25	0
3847L:					
Fluvaquents-----	0-10	5.6-7.3	8.0-23	0	0
	10-60	5.6-7.8	2.0-19	0-25	0
Orthents--------	0-6	5.6-7.3	9.0-18	0	0
	6-60	5.6-7.3	9.0-18	0	0
5079B:					
Menfro, karst---	0-7	5.1-7.3	10-16	0	0
	7-56	4.5-7.3	15-20	0	0
	56-80	5.6-7.8	5.0-10	0-5	0
5079C:					
Menfro, karst---	0-5	5.1-7.3	10-16	0	0
	5-50	4.5-7.3	15-20	0	0
	50-80	5.6-7.8	5.0-10	0-5	0
5079D:					
Menfro, karst---	0-5	5.1-7.3	10-16	0	0
	5-50	4.5-7.3	15-20	0	0
	50-80	5.6-7.8	5.0-10	0-5	0
5079G:					
Menfro, karst---	0-9	5.1-7.3	10-16	0	0
	9-52	4.5-7.3	15-20	0	0
	52-80	5.6-7.8	5.0-10	0-5	0
5491C:					
Ruma, karst-----	0-5	5.6-7.3	15-25	0	0
	5-48	4.5-6.5	18-28	0	0
	48-80	5.1-7.3	12-20	0	0
5491D:					
Ruma, karst-----	0-5	5.6-7.3	15-25	0	0
	5-48	4.5-6.5	18-28	0	0
	48-80	5.1-7.3	12-20	0	0
5491G:					
Ruma, karst-----	0-7	5.6-7.3	15-22	0	0
	7-45	4.5-6.5	18-28	0	0
	45-80	5.1-7.3	12-20	0	0
5582B:					
Homen, karst----	0-9	5.6-7.3	15-25	0	0
	9-15	4.5-6.5	15-22	0	0
	15-58	4.5-6.0	18-28	0	0
	58-80	5.1-6.5	12-20	0	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorption ratio
	In	pH	meq/100 g	Pct	
582C:					
Homen, karst	0-7	5.6-7.3	15-25	0	0
	7-50	4.5-6.0	18-28	0	0
	50-80	5.1-6.5	12-20	0	0
7430A:					
Raddle	0-20	5.6-7.3	11-22	0	0
	20-65	5.6-7.3	12-18	0	0
	65-80	5.6-7.8	15-23	0	0
8038B:					
Rocher	0-5	6.6-8.4	7.0-12	0-20	0
	5-53	7.4-8.4	4.0-12	5-30	0
	53-62	6.6-8.4	2.0-10	5-30	0
8070A:					
Beaucoup	0-16	5.6-7.8	26-33	0	0
	16-64	5.6-7.8	16-25	0-5	0
	64-80	6.1-8.4	6.0-20	0-15	0
8071L:					
Darwin	0-16	6.1-7.8	32-37	0	0
	16-62	6.1-7.8	27-40	0-5	0
	62-80	6.6-8.4	18-34	0-15	0
8078A:					
Arenzville	0-31	5.6-7.8	6.0-12	0	0
	31-56	5.6-7.8	10-18	0	0
	56-70	5.6-7.8	10-16	0	0
8084A:					
Okaw	0-7	4.5-7.3	10-20	0	0
	7-15	4.5-6.5	10-15	0	0
	15-54	3.6-7.3	24-36	0	0
	54-80	4.5-8.4	21-35	0-10	0
8122B:					
Colp	0-8	5.1-7.3	14-20	0	0
	8-12	5.1-7.3	11-16	0	0
	12-70	4.5-7.8	21-31	0-5	0
	70-80	4.5-8.4	18-28	0-15	0
8122C:					
Colp	0-5	5.1-7.3	17-23	0	0
	5-70	4.5-7.8	21-31	0-5	0
	70-80	4.5-8.4	18-28	0-15	0
8180A:					
Dupo	0-9	5.6-7.8	8.0-15	0	0
	9-25	5.6-7.8	6.0-12	0	0
	25-80	5.6-7.8	21-29	0-5	0
8183A:					
Shaffton	0-10	5.1-7.3	25-30	0	0
	10-21	4.5-6.0	20-25	0	0
	21-43	4.5-6.0	10-15	0	0
	43-60	5.1-6.5	5.0-15	0	0
8284A:					
Tice	0-16	6.1-7.8	20-27	0	0
	16-72	5.1-7.3	16-23	0	0
	72-80	5.1-7.8	9.0-20	0-5	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorp-tion ratio
	In	pH	meq/100 g	Pct	
8302A:					
Ambraw----------	0-11	5.6-7.3	20-27	0	0
	11-21	5.1-7.3	19-29	0	0
	21-34	5.1-7.3	15-23	0	0
	34-60	5.6-8.4	11-19	0-5	0
8304B:					
Landes----------	0-14	5.6-7.8	6.0-16	0	0
	14-39	5.6-8.4	3.0-15	0-10	0
	39-80	5.6-8.4	3.0-15	0-20	0
8333A:					
Wakeland--------	0-8	5.6-7.3	4.0-12	0	0
	8-68	5.6-7.8	4.0-12	0	0
	68-80	5.6-7.8	4.0-12	0	0
8336A:					
Wilbur----------	0-7	5.6-7.3	4.0-16	0	0
	7-41	5.6-7.8	4.0-15	0	0
	41-65	5.6-7.8	4.0-16	0	0
8338B:					
Hurst-----------	0-6	5.1-7.3	14-20	0	0
	6-10	3.5-6.0	11-19	0	0
	10-56	3.5-7.8	21-29	0-5	0
	56-80	5.1-8.4	12-27	0-15	0
8394B:					
Haynie----------	0-8	7.4-8.4	10-15	0-20	0
	8-42	7.4-8.4	9.0-12	5-30	0
	42-60	7.4-8.4	9.0-12	5-30	0
8436B:					
Meadowbank------	0-17	5.1-7.3	14-26	0	0
	17-34	5.1-7.3	22-29	0	0
	34-53	4.5-7.3	12-20	0	0
	53-80	5.1-7.3	2.0-8.0	0	0
8457L:					
Booker----------	0-13	5.6-7.3	30-45	0	0
	13-60	5.6-7.3	40-60	0	0
8591A:					
Fults-----------	0-12	5.6-7.8	30-44	0	0
	12-32	5.6-7.8	21-38	0	0
	32-42	5.6-7.8	6.0-20	0-5	0
	42-60	5.6-7.8	1.0-12	0-10	0
8592A:					
Nameoki---------	0-12	5.6-7.8	28-44	0	0
	12-28	5.6-7.8	22-38	0	0
	28-54	5.6-7.8	9.0-22	0-5	0
	54-80	5.6-7.8	3.0-19	0-10	0
8787A:					
Banlic----------	0-8	5.1-7.8	7.0-13	0	0
	8-21	4.5-7.3	7.0-13	0	0
	21-55	4.5-5.5	6.0-13	0	0
	55-77	4.5-6.5	7.0-13	0	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Calcium carbonate	Sodium adsorp-tion ratio
	In	pH	meq/100 g	Pct	
8812F:					
Typic Hapludalfs	0-6	5.1-7.3	18-24	0	0
	6-60	4.5-7.8	10-25	0-20	0

Table 22.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
7D3:										
Atlas	D	Jan-May	0.5-2.0	1.2-2.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
8F2:										
Hickory	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
30F:										
Hamburg	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
31A:										
Pierron	D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
46A:										
Herrick	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
50A:										
Virden	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
75B:										
Drury	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
75C:										
Drury	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
75D:										
Drury	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
75F:										
Drury	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
79B:										
Menfro	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
79C2:										
Menfro	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
79D3:										
Menfro	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
79F:										
Menfro	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
79F3:										
Menfro	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
90A:										
Bethalto	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
109A:										
Racoon	C	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		May	0.0-1.0	>6.0	Apparent	---	---	---	---	None
		Jun-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	0.0-0.5	Brief	Frequent	---	None
123:										
Riverwash	---	Jan-Jun	>6.0	>6.0	---	---	---	---	Long	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Long	Frequent
216G:										
Stookey	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
267A:										
Caseyville	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
267B:										
Caseyville	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
423A:										
Millstadt	C	Jan-May	0.5-2.0	1.5-6.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
437B:										
Redbud	C	Jan-Apr	2.0-3.5	2.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
438B:										
Aviston	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
438C2:										
Aviston	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
477B:										
Winfield	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
477C2:										
Winfield	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
491B:										
Ruma	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
491C2:										
Ruma	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
491D3:										
Ruma	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
515C3:										
Bunkum	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
515D3:										
Bunkum	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
517A:										
Marine	C	Jan-May	0.5-2.0	1.5-3.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
517B:										
Marine	C	Jan-May	0.5-2.0	1.5-3.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
582B:										
Homen	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
582B2:										
Homen	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
582C2:										
Homen	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	3.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
657A:										
Burksville	D	Jan-May	0.0-1.0	2.5-4.0	Perched	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
658F:										
Sonsac	C	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
785G:										
Lacrescent	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
801D:										
Orthents, silty	C	Jan-May	1.0-3.5	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
802D:										
Orthents, loamy	B	Jan-Apr	3.5-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
864.										
Pits, quarries										
878C3:										
Coulterville	D	Jan-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
878C3:										
Grantfork	D	Jan-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
880B2:										
Coulterville	D	Jan-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Darmstadt	D	Jan-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
882A:										
Oconee	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Darmstadt	D	Jan-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Coulterville	D	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
882B:										
Oconee	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Coulterville	D	Jan-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Darmstadt	D	Jan-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
884B2:										
Bunkum	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Coulterville	D	Jan-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
884C3:										
Bunkum	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Coulterville	D	Jan-May	0.5-2.0	2.5-4.0	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
886F:										
Ruma	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
Ursa	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	4.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
886F3:										
Ruma	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
886F3:										
Ursa	C	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	4.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
897D3:										
Bunkum	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Atlas	D	Jan-May	0.5-2.0	1.2-2.5	Perched	---	---	---	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
907D3:										
Redbud	C	Jan-Apr	2.0-3.5	2.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
Colp	C	Jan-Apr	1.0-2.5	2.0-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
988F:										
Westmore	C	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
Neotoma	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
993A:										
Cowden	D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
Piasa	D	Jan-May	0.0-1.0	2.5-4.0	Perched	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
1071A:										
Darwin, undrained	D	Jan-May	0.0-1.0	>6.0	Apparent	0.5-2.0	Very long	Frequent	Brief	Occasional
		Jun	>6.0	>6.0	---	0.5-2.0	Very long	Frequent	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	0.5-2.0	Very long	Frequent	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.5-2.0	Very long	Frequent	Brief	Occasional
1457A:										
Booker, undrained	D	Jan-Jun	0.0-1.0	>6.0	Apparent	0.5-2.0	Very long	Frequent	Brief	Occasional
		Jul-Oct	0.0-1.0	>6.0	Apparent	0.5-2.0	Very long	Frequent	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.5-2.0	Very long	Frequent	Brief	Occasional
1591A:										
Fults, undrained	D	Jan-Jun	0.0-1.0	>6.0	Apparent	0.5-2.0	Very long	Frequent	Brief	Occasional
		Jul-Oct	0.0-1.0	>6.0	Apparent	0.5-2.0	Very long	Frequent	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.5-2.0	Very long	Frequent	Brief	Occasional
3092B:										
Sarpy	A	Jan-Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
3226A:										
Wirt	B	Jan-Apr	4.0-6.0	>6.0	Apparent	---	---	---	Brief	Frequent
		May-Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
3288L:										
Petrolia	C/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Long	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Frequent

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
3333A:										
Wakeland	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Brief	Frequent
3333L:										
Wakeland	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	Long	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Long	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	---	Long	Frequent
3334L:										
Birds	C/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Long	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	0.0-0.5	Long	Frequent	Long	Frequent
3336A:										
Wilbur	B	Jan-Apr	1.5-2.0	>6.0	Apparent	---	---	---	Brief	Frequent
		May-Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
3391A:										
Blake	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
3394B:										
Haynie	B	Jan-Apr	3.5-6.0	>6.0	Apparent	---	---	---	Brief	Frequent
		May-Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
3646A:										
Fluvaquents, loamy	C	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Brief	Frequent
3847L:										
Fluvaquents	C	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Frequent
		Jun	>6.0	>6.0	---	---	---	---	Long	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Frequent
Orthents	B	Jan-Apr	3.5-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
5079B:										
Menfro, karst	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
5079C:										
Menfro, karst	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
5079D:										
Menfro, karst	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None
5079G:										
Menfro, karst	B	Jan-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth Upper limit	Water table depth Lower limit	Kind of water table	Ponding Surface water depth	Ponding Duration	Ponding Frequency	Flooding Duration	Flooding Frequency
			Ft	Ft		Ft				
5491C:										
Ruma, karst	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
5491D:										
Ruma, karst	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
5491G:										
Ruma, karst	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	4.0-6.0	>6.0	Apparent	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
5582B:										
Homen, karst	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
5582C:										
Homen, karst	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-Apr	2.0-3.5	2.5-6.0	Perched	---	---	---	---	None
		May-Dec	>6.0	>6.0	---	---	---	---	---	None
7430A:										
Raddle	B	Jan-Jun	>6.0	>6.0	---	---	---	---	---	Rare
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8038B:										
Rocher	B	Jan-Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8070A:										
Beaucoup	B	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Occasional
		May	0.0-1.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	0.0-0.5	Brief	Frequent	Brief	Occasional
8071L:										
Darwin	D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Long	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Occasional
8078A:										
Arenzville	B	Jan-Apr	4.0-6.0	>6.0	Apparent	---	---	---	Brief	Occasional
		May-Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8084A:										
Okaw	D	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Occasional
		May	0.0-1.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	0.0-0.5	Brief	Frequent	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
8122B:										
Colp	C	Jan	1.0-2.5	2.0-6.0	Perched	---	---	---	---	None
		Feb-Apr	1.0-2.5	2.0-6.0	Perched	---	---	---	Brief	Occasional
		May	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
8122C:										
Colp	C	Jan	1.0-2.5	2.0-6.0	Perched	---	---	---	---	None
		Feb-Apr	1.0-2.5	2.0-6.0	Perched	---	---	---	Brief	Occasional
		May	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
8180A:										
Dupo	C	Jan-May	0.5-2.0	1.5-6.0	Perched	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8183A:										
Shaffton	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8284A:										
Tice	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8302A:										
Ambraw	B/D	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Occasional
		May	0.0-1.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	0.0-0.5	Brief	Frequent	Brief	Occasional
8304B:										
Landes	B	Jan-May	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
8333A:										
Wakeland	C	Jan-May	0.5-2.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8336A:										
Wilbur	B	Jan-Apr	1.5-2.0	>6.0	Apparent	---	---	---	Brief	Occasional
		May-Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8338B:										
Hurst	D	Jan-May	1.0-2.0	1.5-6.0	Perched	---	---	---	Brief	Occasional
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None
8394B:										
Haynie	B	Jan-Apr	3.5-6.0	>6.0	Apparent	---	---	---	Brief	Occasional
		May-Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8436B:										
Meadowbank	B	Jan	>6.0	>6.0	---	---	---	---	---	None
		Feb-May	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table depth: Upper limit	Water table depth: Lower limit	Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
8457L:										
Booker	D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Long	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-0.5	Long	Frequent	Long	Occasional
8591A:										
Fults	D	Jan-Apr	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Occasional
		May	0.0-1.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	---	---	None
		Nov-Dec	>6.0	>6.0	---	0.0-0.5	Brief	Frequent	---	None
8592A:										
Nameoki	D	Jan-May	1.0-2.0	>6.0	Apparent	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8787A:										
Banlic	C	Jan-May	0.5-2.0	1.5-6.0	Perched	---	---	---	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jul-Dec	>6.0	>6.0	---	---	---	---	---	None
8812F:										
Typic Hapludalfs	B	Jan-May	>6.0	>6.0	---	---	---	---	Brief	Occasional
		Jun-Dec	>6.0	>6.0	---	---	---	---	---	None

Table 23.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
7D3:					
Atlas	---	>80	High	High	Moderate
8F2:					
Hickory	---	>80	Moderate	Moderate	Moderate
30F:					
Hamburg	---	>80	High	Low	Low
31A:					
Pierron	---	>80	High	High	High
46A:					
Herrick	---	>80	High	High	High
50A:					
Virden	---	>80	High	High	Moderate
75B:					
Drury	---	>80	High	Moderate	Moderate
75C:					
Drury	---	>80	High	Moderate	Moderate
75D:					
Drury	---	>80	High	Moderate	Moderate
75F:					
Drury	---	>80	High	Moderate	Moderate
79B:					
Menfro	---	>80	High	Low	Moderate
79C2:					
Menfro	---	>80	High	Low	Moderate
79D3:					
Menfro	---	>80	High	Low	Moderate
79F:					
Menfro	---	>80	High	Low	Moderate
79F3:					
Menfro	---	>80	High	Low	Moderate
90A:					
Bethalto	---	>80	High	High	Moderate
109A:					
Racoon	---	>80	High	High	High
123.					
Riverwash					
216G:					
Stookey	---	>80	High	Low	High
267A:					
Caseyville	---	>80	High	High	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
267B:					
Caseyville	---	>80	High	High	Moderate
423A:					
Millstadt	---	>80	High	High	High
437B:					
Redbud	---	>80	High	High	High
438B:					
Aviston	---	>80	High	High	Moderate
438C2:					
Aviston	---	>80	High	High	Moderate
477B:					
Winfield	---	>80	High	Moderate	Moderate
477C2:					
Winfield	---	>80	High	Moderate	Moderate
491B:					
Ruma	---	>80	High	High	High
491C2:					
Ruma	---	>80	High	High	High
491D3:					
Ruma	---	>80	High	High	High
515C3:					
Bunkum	---	>80	High	High	High
515D3:					
Bunkum	---	>80	High	High	High
517A:					
Marine	---	>80	High	High	High
517B:					
Marine	---	>80	High	High	High
582B:					
Homen	---	>80	High	High	High
582B2:					
Homen	---	>80	High	High	High
582C2:					
Homen	---	>80	High	High	High
657A:					
Burksville	---	>80	High	High	Low
658F:					
Sonsac	Bedrock (lithic)	20-40	Low	Moderate	Low
785G:					
Lacrescent	---	>80	Moderate	Low	Low
801D:					
Orthents, silty	---	>80	High	High	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In			
802D:					
Orthents, loamy	---	>80	Moderate	Moderate	Moderate
864.					
Pits, quarries					
878C3:					
Coulterville	---	>80	High	High	High
Grantfork	---	>80	High	High	Low
880B2:					
Coulterville	---	>80	High	High	High
Darmstadt	---	>80	High	High	High
882A:					
Oconee	---	>80	High	High	High
Darmstadt	---	>80	High	High	High
Coulterville	---	>80	High	High	High
882B:					
Oconee	---	>80	High	High	High
Coulterville	---	>80	High	High	High
Darmstadt	---	>80	High	High	High
884B2:					
Bunkum	---	>80	High	High	High
Coulterville	---	>80	High	High	High
884C3:					
Bunkum	---	>80	High	High	High
Coulterville	---	>80	High	High	High
886F:					
Ruma	---	>80	High	High	High
Ursa	---	>80	Moderate	High	Moderate
886F3:					
Ruma	---	>80	High	High	High
Ursa	---	>80	Moderate	High	Moderate
897D3:					
Bunkum	---	>80	High	High	High
Atlas	---	>80	High	High	Moderate
907D3:					
Redbud	---	>80	High	High	High
Colp	---	>80	High	High	High

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
988F:					
Westmore	Bedrock (lithic)	48	High	High	Moderate
Neotoma	Bedrock (lithic)	40-80	Low	Low	Moderate
993A:					
Cowden	---	>80	High	High	Moderate
Piasa	---	>80	High	High	Low
1071A:					
Darwin, undrained	---	>80	Moderate	High	Low
1457A:					
Booker, undrained	---	>80	Moderate	High	Moderate
1591A:					
Fults, undrained	---	>80	High	High	Moderate
3092B:					
Sarpy	---	>80	Low	Low	Low
3226A:					
Wirt	---	>80	Moderate	Low	Moderate
3288L:					
Petrolia	---	>80	High	High	Low
3333A:					
Wakeland	---	>80	High	Moderate	Low
3333L:					
Wakeland	---	>80	High	Moderate	Low
3334L:					
Birds	---	>80	High	High	Moderate
3336A:					
Wilbur	---	>80	High	Moderate	Low
3391A:					
Blake	---	>80	High	High	Low
3394B:					
Haynie	---	>80	High	Low	Low
3646A:					
Fluvaquents, loamy	---	>80	High	High	Moderate
3847L:					
Fluvaquents	---	>80	High	High	Moderate
Orthents	---	>80	Moderate	Moderate	Moderate
5079B:					
Menfro, karst	---	>80	High	Low	Moderate
5079C:					
Menfro, karst	---	>80	High	Low	Moderate
5079D:					
Menfro, karst	---	>80	High	Low	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
5079G:					
Menfro, karst	---	>80	High	Low	Moderate
5491C:					
Ruma, karst	---	>80	High	High	High
5491D:					
Ruma, karst	---	>80	High	High	High
5491G:					
Ruma, karst	---	>80	High	High	High
5582B:					
Homen, karst	---	>80	High	High	High
5582C:					
Homen, karst	---	>80	High	High	High
7430A:					
Raddle	---	>80	High	Moderate	Moderate
8038B:					
Rocher	---	>80	Moderate	Low	Low
8070A:					
Beaucoup	---	>80	High	High	Low
8071L:					
Darwin	---	>80	Moderate	High	Low
8078A:					
Arenzville	---	>80	High	Moderate	Moderate
8084A:					
Okaw	---	>80	High	High	High
8122B:					
Colp	---	>80	High	High	High
8122C:					
Colp	---	>80	High	High	High
8180A:					
Dupo	---	>80	High	High	Moderate
8183A:					
Shaffton	---	>80	Moderate	High	High
8284A:					
Tice	---	>80	High	High	Low
8302A:					
Ambraw	---	>80	High	High	Moderate
8304B:					
Landes	---	>80	Moderate	Low	Low
8333A:					
Wakeland	---	>80	High	Moderate	Low
8336A:					
Wilbur	---	>80	High	Moderate	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
8338B:					
Hurst	---	>80	Moderate	High	High
8394B:					
Haynie	---	>80	High	Low	Low
8436B:					
Meadowbank	---	>80	High	Moderate	Moderate
8457L:					
Booker	---	>80	Moderate	High	Moderate
8591A:					
Fults	---	>80	High	High	Moderate
8592A:					
Nameoki	---	>80	High	High	Moderate
8787A:					
Banlic	---	>80	High	High	High
8812F:					
Typic Hapludalfs	---	>80	High	Moderate	Moderate

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U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

DESCRIPTION	SYMBOL

CULTURAL FEATURES

BOUNDARIES

- * National, state, or province
- * County or parish
- Minor civil division
- Reservation, (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access areas
- * Field sheet matchline & neatline
- Previously published survey

OTHER BOUNDARY (label)

- Airport, airfield — Davis airstrip
- * Cemetery — St Johns Cemetery
- City / county Park — Central Park

STATE COORDINATE TICK

* LAND DIVISION CORNERS (section and land grants)

* GEOGRAPHIC COORDINATE TICK

TRANSPORTATION

- Divided roads
- Other roads
- # Trails

ROAD EMBLEMS & DESIGNATIONS

- * Interstate — 79; 79 345
- * Federal — 410; 410 224
- * State — 52; 52 347
- County, farm, or ranch — 376

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPELINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad
- Single side slope (showing actual feature location)

DAMS

- Medium or small — W

LANDFORM FEATURES

- Prominent Hill or Peak
- Soil Sample Site

* Cultural features for use in Illinois

DESCRIPTION	SYMBOL

CULTURAL FEATURES (cont.)

MISCELLANEOUS CULTURAL FEATURES

- Farmland, house (omit in urban areas)
- Church
- School
- Other Religion (label) — Mt Carmel
- Located object (label) — Ranger Station
- Tank (label) — Petroleum
- Lookout Tower
- Oil and / or Natural Gas Wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end

DRAINAGE AND IRRIGATION

- Double line canal (label) — CANAL
- Perennial drainage and/or irrigation ditch
- Intermittent drainage and/or irrigation ditch

SMALL LAKES, PONDS, AND RESERVOIRS

- Perennial water
- Miscellaneous water
- Flood pool line — FLOOD POOL LINE

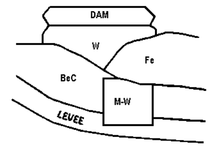
MISCELLANEOUS WATER FEATURES

- Spring
- Well, artesian
- Well, irrigation

DESCRIPTION	SYMBOL

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS



LANDFORM FEATURES

ESCARPMENTS

- Bedrock
- Other than bedrock

SHORT STEEP SLOPE

GULLY

DEPRESSION, closed

SINKHOLE

EXCAVATIONS

PITS

- Borrow pit
- Gravel pit
- Mine or quarry

LANDFILL

MISCELLANEOUS SURFACE FEATURES

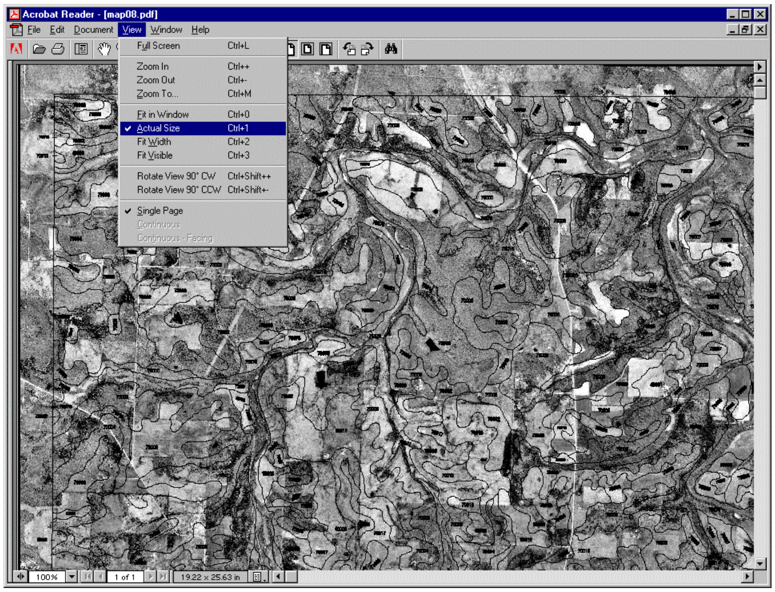
- Blowout
- Clay spot
- Gravelly spot
- Lava flow
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

RECOMMENDED AD HOC SOIL SYMBOLS

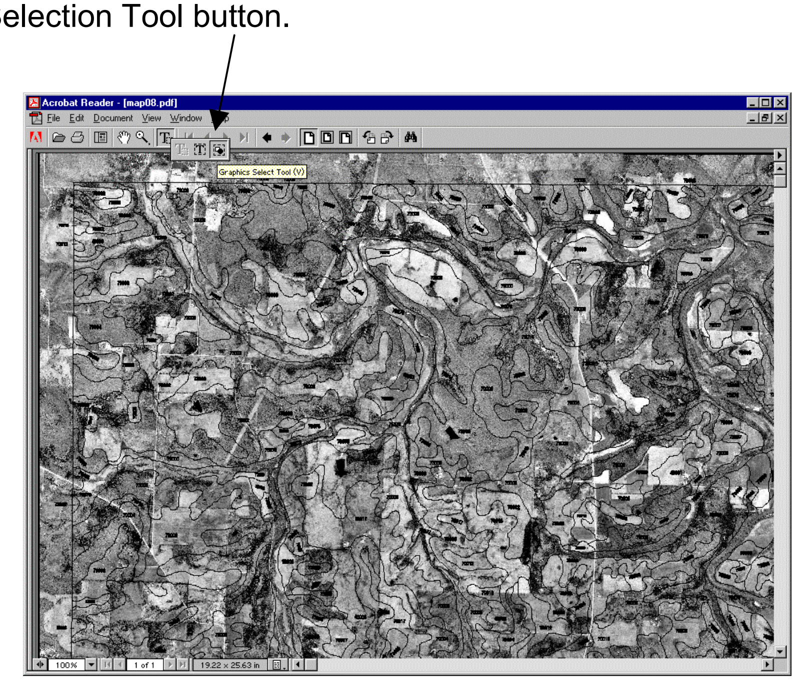
	SYMBOL_ID			SYMBOL_ID	
	1			23	
	2			24	
	3			25	
	4		Gray spot	26	GSP
	5			27	
	6			28	
	7		Calcareous spot	29	CSP
	8		Muck spot	30	MUC
	9			31	
	10			32	
	11			33	
Dumps	12	DMP		34	
	13		Mine subsided Area	35	MSA
	14			36	
Oil brine spot	15	OBS		37	
	16			38	
	17			39	
	18		Glacial Till spot	40	GLA
	19			41	
Disturbed soil spot	20	DSS		42	
	21			43	
	22			44	

Printing Soil Survey Maps

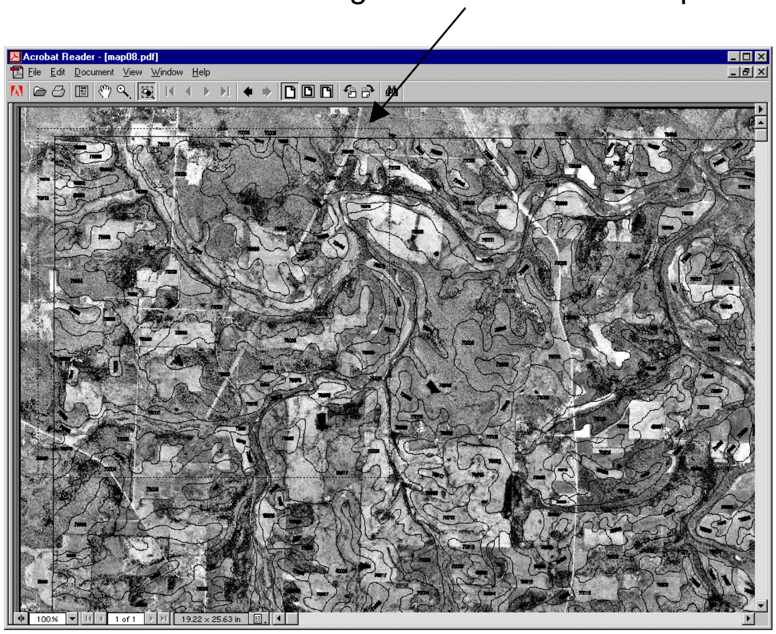
The soil survey maps were made at a scale of 1:12000 and were designed to be used at that scale. To print the maps at 1:12000 scale, set the view to Actual Size from the View pull down menu.



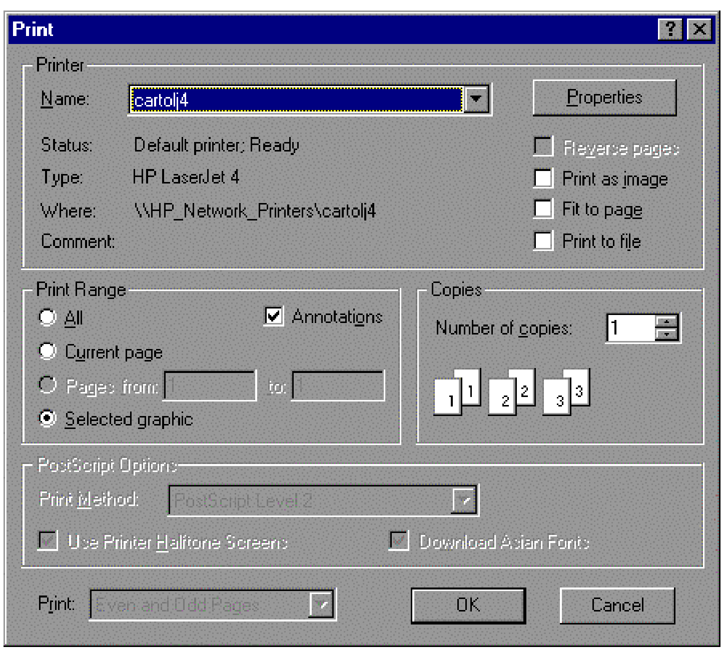
Using the pan tool, go to the area you would like to print. Select the Graphic Selection Tool by holding down the Text Selection Tool button and clicking on the Graphic Selection Tool button.



Then using the Graphic Selection Tool drag a box around the area you would like to print. Note dashed lines forming a box around area to print.



Select File Print. The Print Range will be set to Selected graphic. Click OK and the map will be sent to the printer.



Descriptions of Special Features

Name	Description	Label
Blowout	A small saucer-, cup-, or trough-shaped hollow or depression formed by wind erosion on a preexisting sand deposit. Typically 0.2 acre to 2.0 acres.	BLO
Borrow pit	An open excavation from which soil and underlying material have been removed, usually for construction purposes. Typically 0.2 acre to 2.0 acres.	BPI
Calcareous spot	An area in which the soil contains carbonates in the surface layer. The surface layer of the named soils in the surrounding map unit is noncalcareous. Typically 0.5 acre to 2.0 acres.	CSP
Clay spot	A spot where the surface layer is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser. Typically 0.2 acre to 2.0 acres.	CLA
Depression, closed	A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage. Typically 0.2 acre to 2.0 acres.	DEP
Disturbed soil spot	An area in which the soil has been removed and materials redeposited as a result of human activity. Typically 0.25 acre to 2.0 acres.	DSS
Dumps	Areas of nonsoil material that support little or no vegetation. Typically 0.5 acre to 2.0 acres.	DMP
Escarpment, bedrock	A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.	ESB
Escarpment, nonbedrock	A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.	ESO
Glacial till spot	An exposure of glacial till at the surface of the earth. Typically 0.25 acre to 2.0 acres.	GLA
Gravel pit	An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel. Typically 0.2 acre to 2.0 acres.	GPI
Gravelly spot	A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments. Typically 0.2 acre to 2.0 acres.	GRA

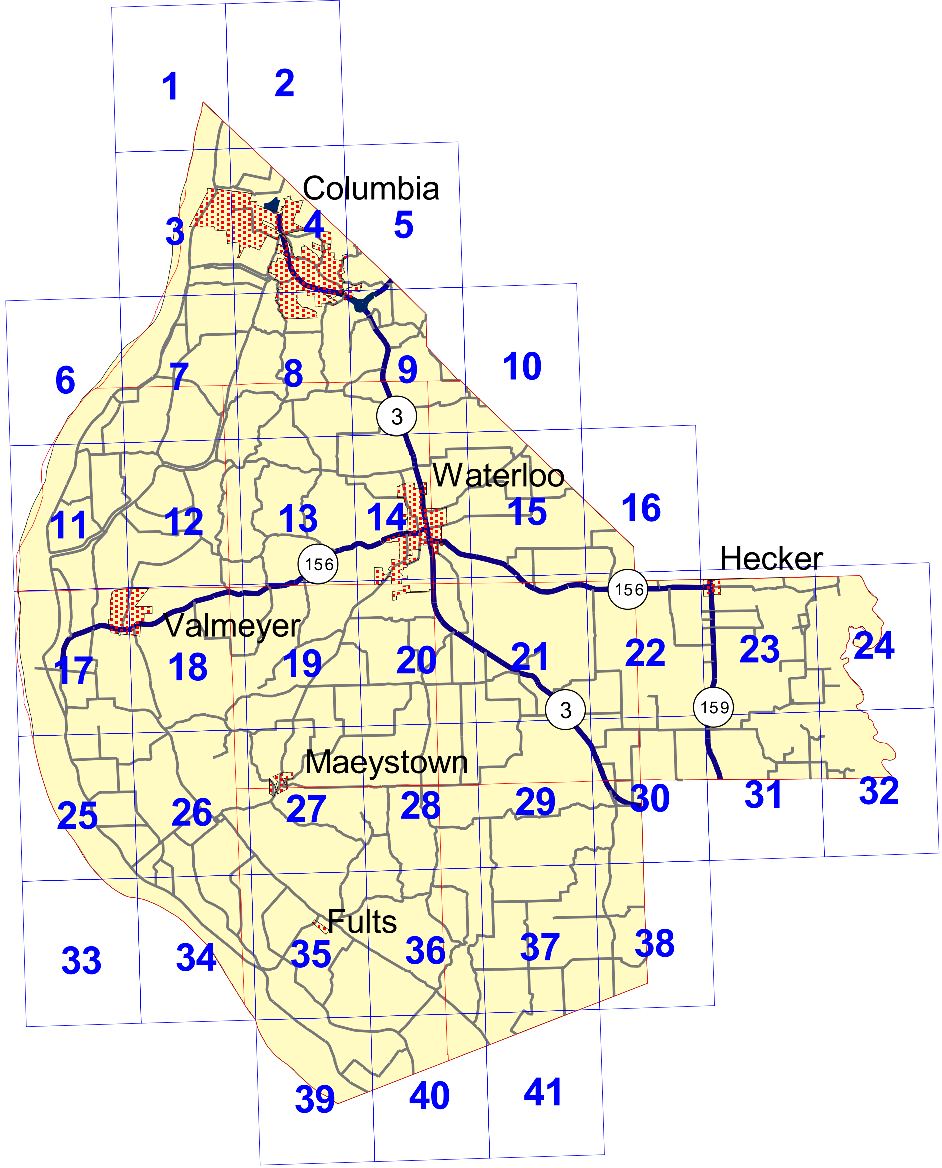
Name	Description	Label
Gray spot	A spot in which the surface layer is gray in areas where the subsurface layer of the named soils in the surrounding map unit are darker. Typically 0.25 acre to 2.0 acres.	GSP
Gully	A small channel with steep sides cut by running water through which water ordinarily runs only after a rain or after melting of snow or ice. It generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage.	GUL
Iron bog	An accumulation of iron in the form of nodules, concretions, or soft masses on the surface or near the surface of soils. Typically 0.2 acre to 2.0 acres.	BFE
Landfill	An area of accumulated waste products of human habitation, either above or below natural ground level. Typically 0.2 acre to 2.0 acres.	LDF
Levee	An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.	LVS
Marsh or swamp	A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Typically 0.2 acre to 2.0 acres.	MAR
Mine or quarry	An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines. Typically 0.2 acre to 2.0 acres.	MPI
Mine subsided area	An area that is lower than the soils in the surrounding map unit because of subsurface coal mining. Typically 0.25 acre to 3.0 acres.	MSA
Miscellaneous water	A small, constructed body of water that is used for industrial, sanitary, or mining applications and that contains water most of the year. Typically 0.2 acre to 2.0 acres.	MIS
Muck spot	An area that occurs within an area of poorly drained or very poorly drained soil and that has a histic epipedon or an organic surface layer. The symbol is used only in map units consisting of mineral soil. Typically 0.2 acre to 2.0 acres.	MUC
Oil brine spot	An area of soil that has been severely damaged by the accumulation of oil brine, with or without liquid oily wastes. The area is typically barren but may have a vegetative cover of salt-tolerant plants. Typically 0.2 acre to 2.0 acres.	OBS
Perennial water	A small, natural or constructed lake, pond, or pit that contains water most of the year. Typically 0.2 acre to 2.0 acres.	WAT

Name	Description	Label
Rock outcrop	An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where “Rock outcrop” is a named component of the map unit. Typically 0.2 acre to 2.0 acres.	ROC
Saline spot	An area where the surface layer has an electrical conductivity of 8 mmhos/cm-l more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm-l or less. Typically 0.2 acre to 2.0 acres.	SAL
Sandy spot	A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer. Typically 0.2 acre to 2.0 acres.	SAN
Severely eroded spot	An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which “severely eroded,” “very severely eroded,” or “gullied” is part of the map unit name. Typically 0.2 acre to 2.0 acres.	ERO
Short steep slope	A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.	SLP
Sinkhole	A closed depression formed either by solution of the surficial rock or by collapse of underlying caves. Typically 0.2 acre to 2.0 acres.	SNK
Slide or slip	A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces. Typically 0.2 acre to 2.0 acres.	SLI
Sodic spot	An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less. Typically 0.2 acre to 2.0 acres.	SOD
Spoil area	A pile of earthy materials, either smoothed or uneven, resulting from human activity. Typically 0.2 acre to 2.0 acres.	SPO
Stony spot	A spot where 0.01 to 0.1 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones. Typically 0.2 acre to 2.0 acres.	STN
Unclassified water	A small, natural or manmade lake, pond, or pit that contains water, of an unspecified nature, most of the year. Typically 0.2 acre to 2.0 acres.	UWT

Name	Description	Label
Very stony spot	A spot where 0.1 to 3.0 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surface cover of the surrounding soil is less than 0.01 percent stones. Typically 0.2 acre to 2.0 acres.	STV
Wet depression	A shallow, concave area within an area of poorly drained or very poorly drained soils in which water is ponded for intermittent periods. The concave area is saturated for appreciably longer periods of time than the surrounding soil. Typically 0.2 acre to 2.0 acres.	WDP
Wet spot	A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit. Typically 0.2 acres to 2.0 acres.	WET

Monroe County, Illinois
Index to atlas sheets.

Click on a blue number
to view soil map of area.



UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
WEBSTER GROVES SE QUADRANGLE
SHEET NUMBER 1 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 WEBSTER GROVE NW
2 WEBSTER GROVE NE
3 CAHOKIA NW
4 WEBSTER GROVE SW
5 CAHOKIA SW (SHEET 2)
6 OAKVILLE NW
7 OAKVILLE NE (SHEET 3)
8 COLUMBIA NW (SHEET 4)

INDEX TO ADJOINING 3.75 MAPS

WEBSTER GROVES SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 1 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
CAHOKIA SW QUADRANGLE
SHEET NUMBER 2 OF 41

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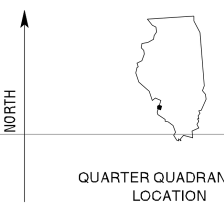


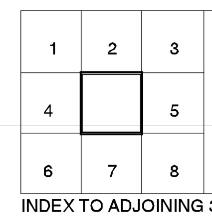
QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS



1 WEBSTER GROVES NE
2 CAHOKIA NW
3 CAHOKIA NE
4 WEBSTER GROVES SE (SHEET 1)
5 CAHOKIA SE
6 OAKVILLE NE (SHEET 3)
7 COLUMBIA NW (SHEET 4)
8 COLUMBIA NE (SHEET 5)

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CAHOKIA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 2 OF 41

UNITED STATES
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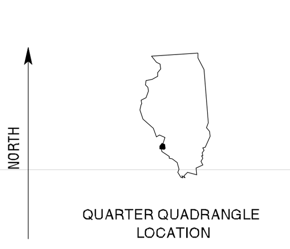

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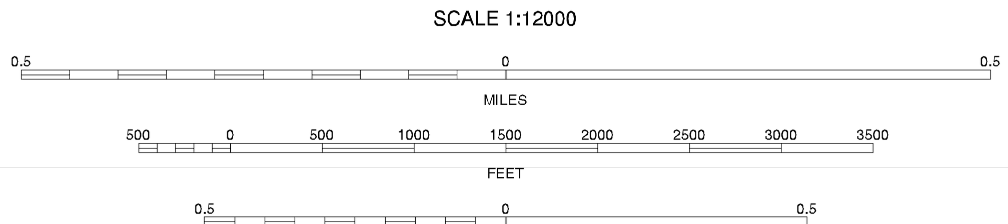

1	2	3
4		5
6	7	8

1 WEBSTER GROVES SW
2 WEBSTER GROVES SE (SHEET 1)
3 CAHOKIA SW (SHEET 2)
4 OAKVILLE NW
5 COLUMBIA NW (SHEET 4)
6 OAKVILLE SW (SHEET 6)
7 OAKVILLE SE (SHEET 7)
8 COLUMBIA SW (SHEET 8)

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OAKVILLE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 3 OF 41

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 WEBSTER GROVES SE (SHEET 1)
2 CAHOKIA SW (SHEET 2)
3 CAHOKIA SE
4 OAKVILLE NE (SHEET 3)
5 COLUMBIA NE (SHEET 5)
6 OAKVILLE SE (SHEET 7)
7 COLUMBIA SW (SHEET 8)
8 COLUMBIA SE (SHEET 9)

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COLUMBIA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 4 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
COLUMBIA NE QUADRANGLE
SHEET NUMBER 5 OF 41

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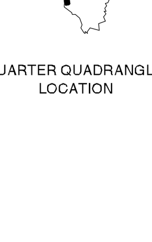
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 CAHOKIA SW (SHEET 2)
2 CAHOKIA SE
3 FRENCH VILLAGE SW
4 COLUMBIA NW (SHEET 4)
5 MILLSTADT NW
6 COLUMBIA SW (SHEET 8)
7 COLUMBIA SE (SHEET 9)
8 MILLSTADT SW (SHEET 10)

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COLUMBIA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 5 OF 41

90°22'30" 38°26'15" — 90°18'45" 38°26'15"

38°22'30" 90°22'30" — 90°18'45" 38°22'30"

R. 11 W.

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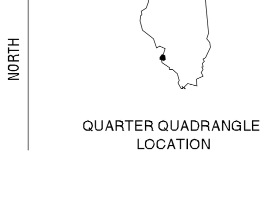

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 MAXVILLE NE
2 OAKVILLE NW
3 OAKVILLE NE (SHEET 3)
4 MAXVILLE SE
5 OAKVILLE SE (SHEET 7)
6 HERCULANEUM NE
7 VALMEYER NW (SHEET 11)
8 VALMEYER NE (SHEET 12)

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OAKVILLE SW, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
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MONROE COUNTY, ILLINOIS
OAKVILLE SE QUADRANGLE
SHEET NUMBER 7 OF 41

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

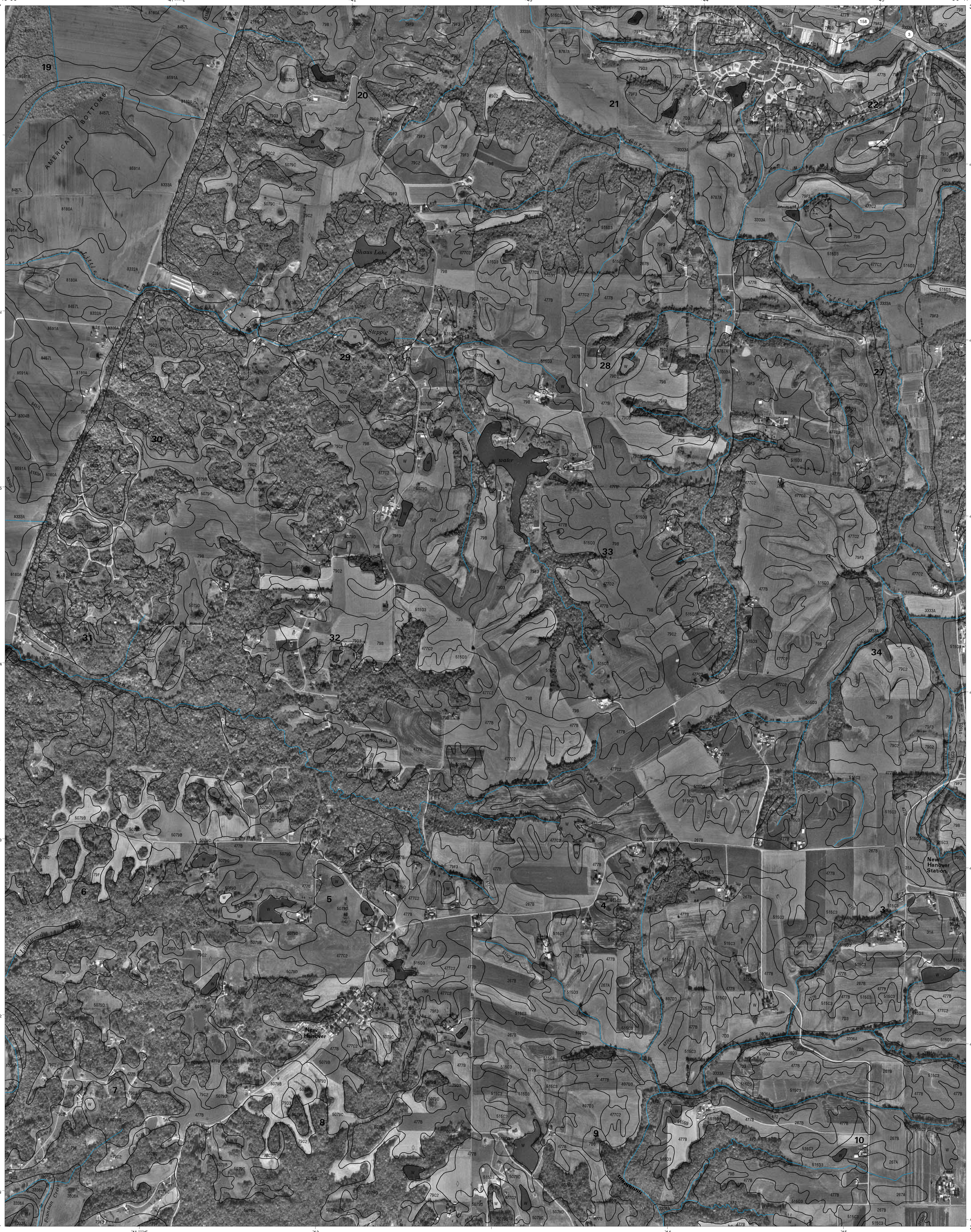
KILOMETERS

1 OAKVILLE NW
2 OAKVILLE NE (SHEET 3)
3 COLUMBIA NW (SHEET 4)
4 OAKVILLE SW (SHEET 6)
5 COLUMBIA SW (SHEET 8)
6 VALMEYER NW (SHEET 11)
7 VALMEYER NE (SHEET 12)
8 WATERLOO NW (SHEET 13)

INDEX TO ADJOINING 3.75 MAPS

OAKVILLE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 7 OF 41

90°15′00″ 38°26′15″ R. 10 W. 90°11′15″ 38°26′15″



38°22′30″ 90°15′00″ R. 10 W. 38°22′30″ 90°11′15″

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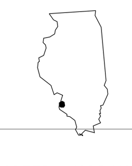
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 OAKVILLE NE (SHEET 3)
2 COLUMBIA NW (SHEET 4)
3 COLUMBIA NE (SHEET 5)
4 OAKVILLE SE (SHEET 7)
5 COLUMBIA SE (SHEET 9)
6 VALMEYER NE (SHEET 12)
7 WATERLOO NW (SHEET 13)
8 WATERLOO NE (SHEET 14)

INDEX TO ADJOINING 3.75 MAPS

UNITED STATES
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NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
COLUMBIA SE QUADRANGLE
SHEET NUMBER 9 OF 41

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 COLUMBIA NW (SHEET 4)
2 COLUMBIA NE (SHEET 5)
3 MILLSTADT NW
4 COLUMBIA SW (SHEET 8)
5 MILLSTADT SW (SHEET 10)
6 WATERLOO NW (SHEET 13)
7 WATERLOO NE (SHEET 14)
8 PADERBORN NW (SHEET 15)

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COLUMBIA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 9 OF 41

UNITED STATES
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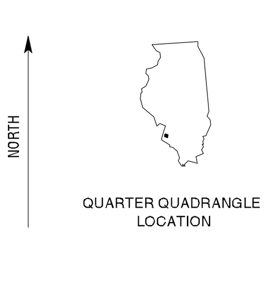
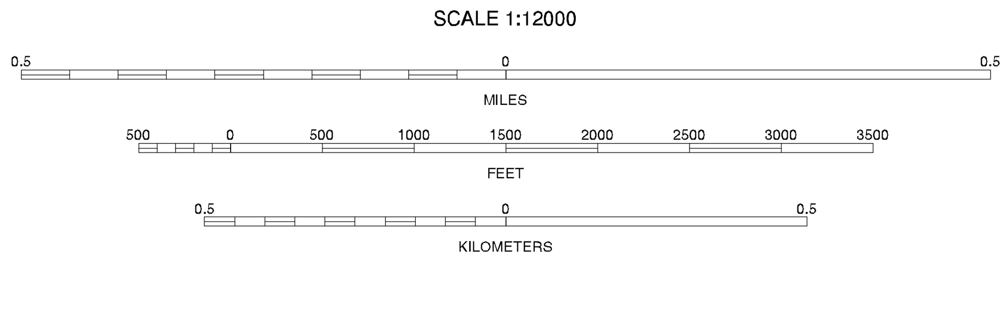


SCALE 1:12000



1	2	3
4		5
6	7	8

1 COLUMBIA NE (SHEET 5)
2 MILLSTADT NW
3 MILLSTADT NE
4 COLUMBIA SE (SHEET 9)
5 MILLSTADT SE
6 WATERLOO NE (SHEET 14)
7 PADERBORN NW (SHEET 15)
8 PADERBORN NE (SHEET 16)

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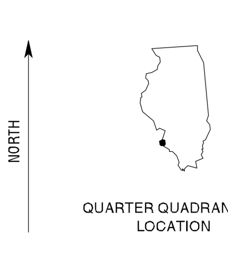
MILLSTADT SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 10 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
VALMEYER NW QUADRANGLE
SHEET NUMBER 11 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 MAXVILLE SE
2 OAKVILLE SW (SHEET 6)
3 OAKVILLE SE (SHEET 7)
4 HERCULANEUM NE
5 VALMEYER NE (SHEET 12)
6 HERCULANEUM SE
7 VALMEYER SW (SHEET 17)"
8 VALMEYER SE (SHEET 18)

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VALMEYER NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 11 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
VALMEYER NE QUADRANGLE
SHEET NUMBER 12 OF 41

90°18′45″ 38°22′30″ | R. 11 W. | R. 10 W. | 90°15′00″ 38°22′30″

38°18′45″ 90°18′45″ | R. 11 W. | R. 10 W. | 38°18′45″ 90°15′00″

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North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

1	2	3
4		5
6	7	8

1 OAKVILLE SW (SHEET 6)
2 OAKVILLE SE (SHEET 7)
3 COLUMBIA SW (SHEET 8)
4 VALMEYER NW (SHEET 11)
5 WATERLOO NW (SHEET 13)
6 VALMEYER SW (SHEET 17)
7 VALMEYER SE (SHEET 18)
8 WATERLOO SW (SHEET 19)

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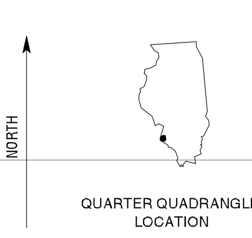
VALMEYER NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 12 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

1	2	3
4		5
6	7	8

1 OAKVILLE SE (SHEET 7)
2 COLUMBIA SW (SHEET 8)
3 COLUMBIA SE (SHEET 9)
4 VALMEYER NE (SHEET 12)
5 WATERLOO NE (SHEET 14)
6 VALMEYER SE (SHEET 18)
7 WATERLOO SW (SHEET 19)
8 WATERLOO SE (SHEET 20)

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UNITED STATES
DEPARTMENT OF AGRICULTURE
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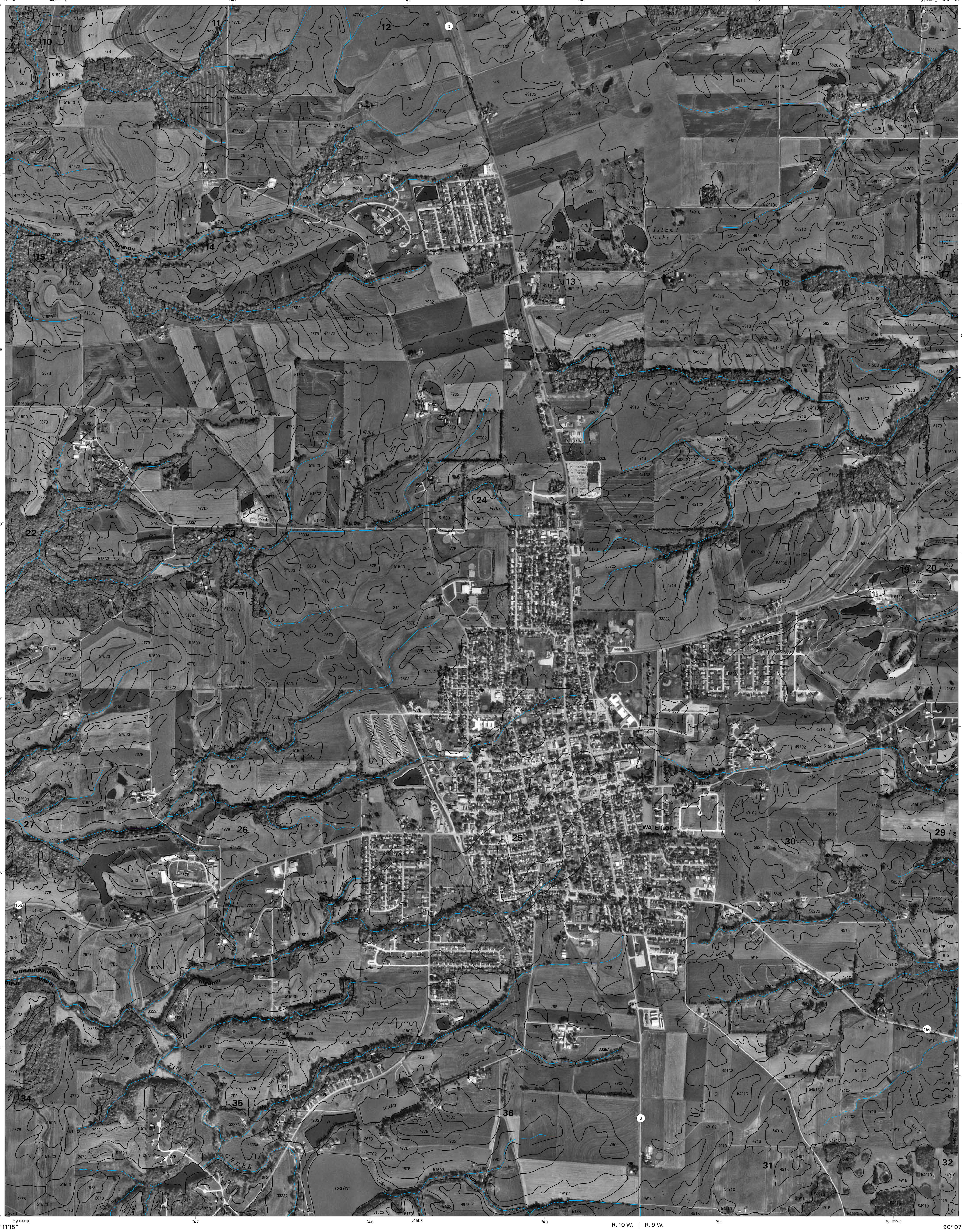
MONROE COUNTY, ILLINOIS
WATERLOO NE QUADRANGLE
SHEET NUMBER 14 OF 41



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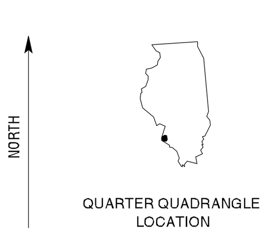
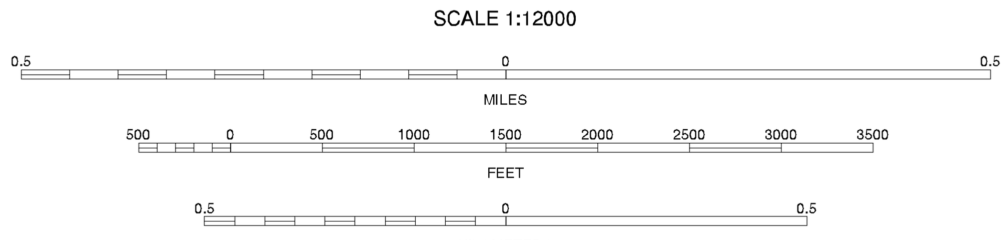
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.





1	2	3
4		5
6	7	8

1 COLUMBIA SW (SHEET 8)
2 COLUMBIA SE (SHEET 9)
3 MILLSTADT SW (SHEET 10)
4 WATERLOO NW (SHEET 13)
5 PADERBORN NW (SHEET 15)
6 WATERLOO SW (SHEET 19)
7 WATERLOO SE (SHEET 20)
8 PADERBORN SW (SHEET 21)

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WATERLOO NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 14 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
PADERBORN NW QUADRANGLE
SHEET NUMBER 15 OF 41

90°07'30" 38°22'30" R. 9 W. 90°03'45" 38°22'30"

38°18'45" 90°07'30" R. 9 W. 38°18'45" 90°03'45"

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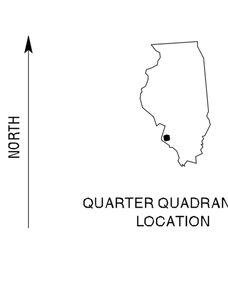
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 COLUMBIA SE (SHEET 9)
2 MILLSTADT SW (SHEET 10)
3 MILLSTADT SE
4 WATERLOO NE (SHEET 14)
5 PADERBORN NE (SHEET 16)
6 WATERLOO SE (SHEET 20)
7 PADERBORN SW (SHEET 21)
8 PADERBORN SE (SHEET 22)

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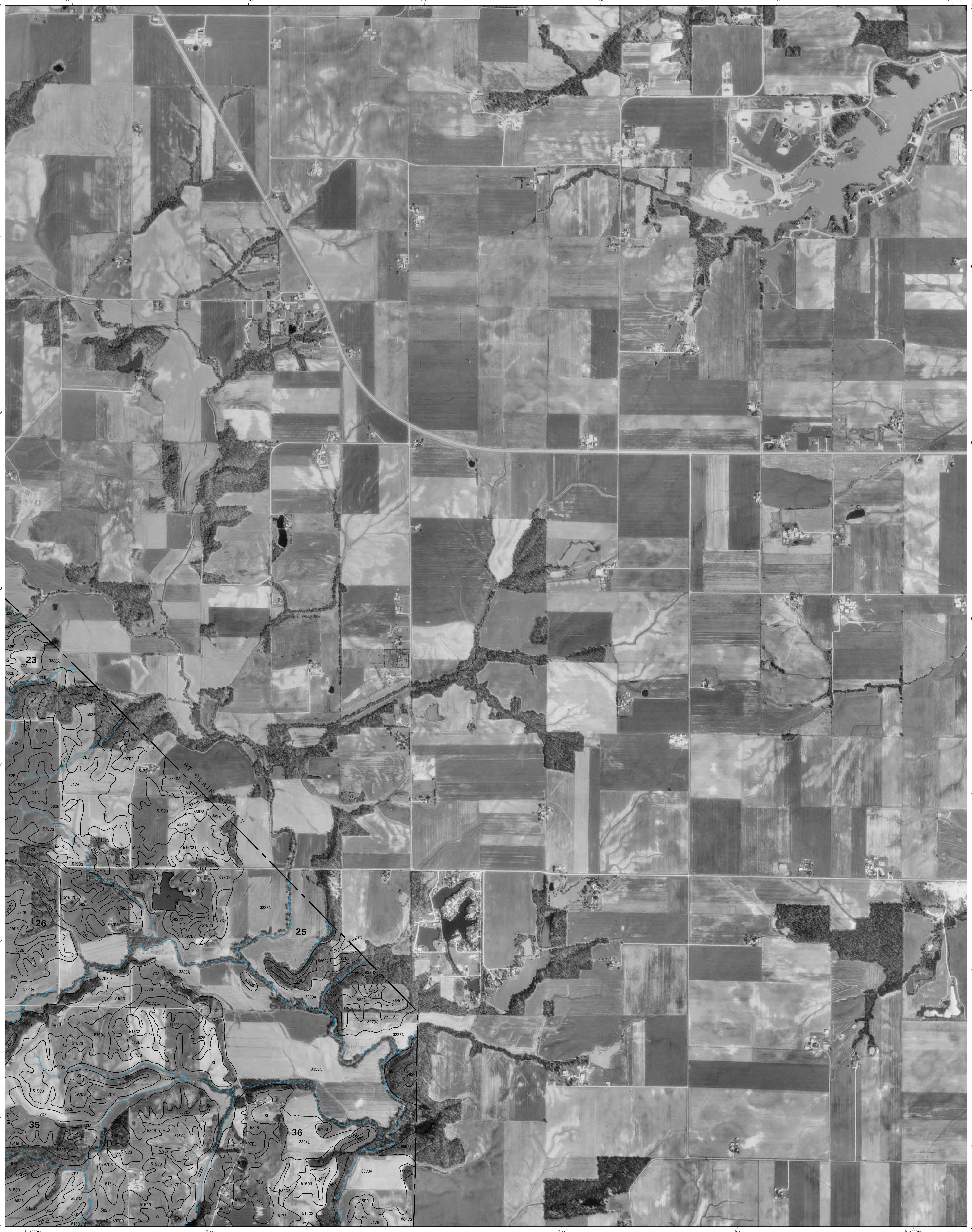
PADERBORN NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 15 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
PADERBORN NE QUADRANGLE
SHEET NUMBER 16 OF 41



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 MILLSTADT SW (SHEET 10)
2 MILLSTADT SE
3 FREEBURG SW
4 PADERBORN NW (SHEET 15)
5 NEW ATHENS WEST NW
6 PADERBORN SW (SHEET 21)
7 PADERBORN SE (SHEET 22)
8 NEW ATHENS WEST SW (SHEET 23)

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PADERBORN NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 16 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
VALMEYER SW QUADRANGLE
SHEET NUMBER 17 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 HERCULANEUM NE
2 VALMEYER NW (SHEET 11)
3 VALMEYER NE (SHEET 12)
4 HERCULANEUM SE
5 VALMEYER SE (SHEET 18)
6 FESTUS NE
7 SELMA NW (SHEET 25)
8 SELMA NE (SHEET 26)

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VALMEYER SW, ILLINOIS
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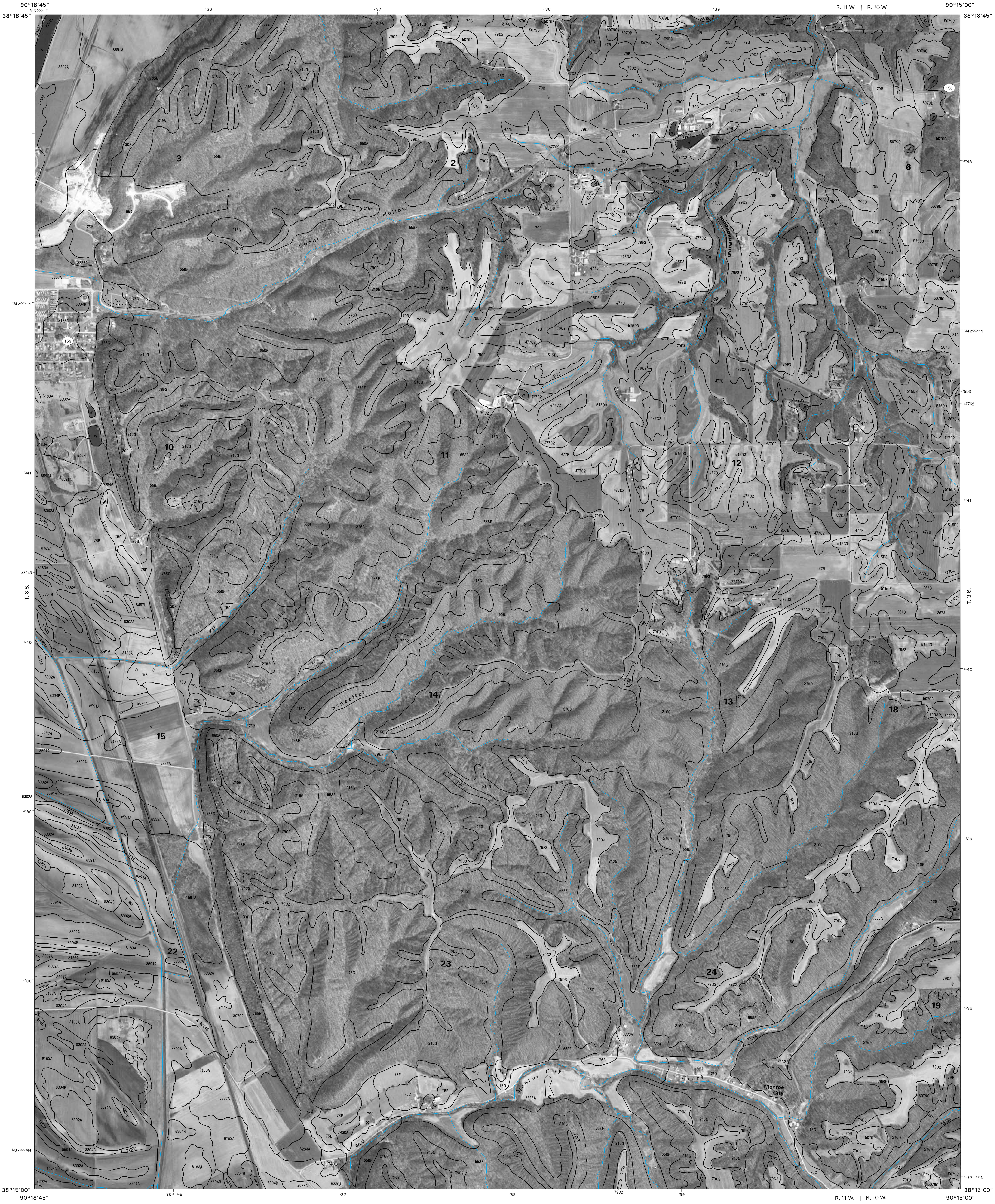
SHEET NUMBER 17 OF 41



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1 VALMEYER NW (SHEET 11)
2 VALMEYER NE (SHEET 12)
3 WATERLOO NW (SHEET 13)
4 VALMEYER SW (SHEET 17)
5 WATERLOO SW (SHEET 19)
6 SELMA NW (SHEET 25)
7 SELMA NE (SHEET 26)
8 RENAULT NW (SHEET 27)

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VALMEYER SE, ILLINOIS

3.75 MINUTE SERIES

SHEET NUMBER 18 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

1 VALMEYER NE (SHEET 12)
2 WATERLOO NW (SHEET 13)
3 WATERLOO NE (SHEET 14)
4 VALMEYER SE (SHEET 18)
5 WATERLOO SE (SHEET 20)
6 SELMA NE (SHEET 26)
7 RENAULT NW (SHEET 27)
8 RENAULT NE (SHEET 28)

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3.75 MINUTE SERIES
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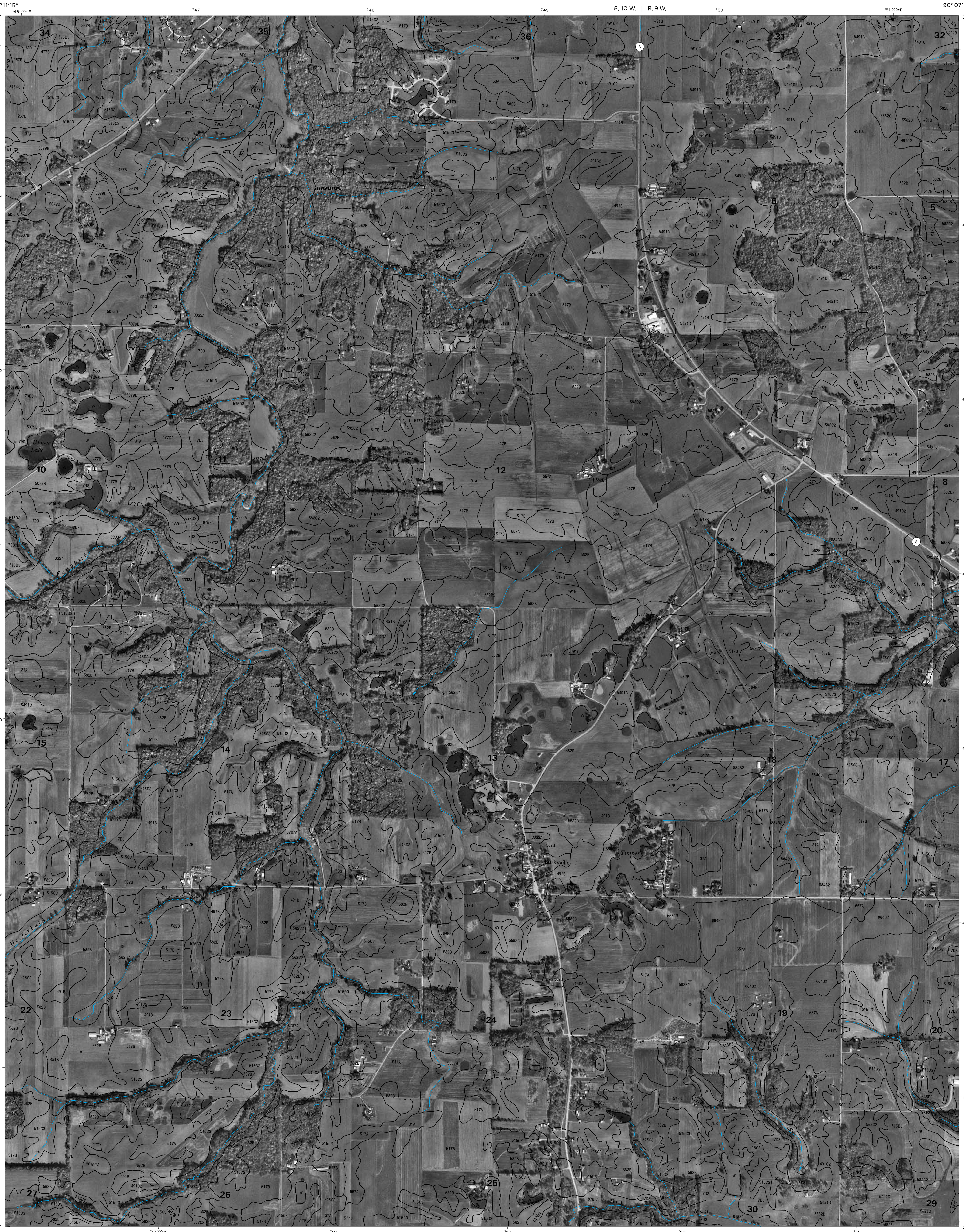
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
WATERLOO SE QUADRANGLE
SHEET NUMBER 20 OF 41



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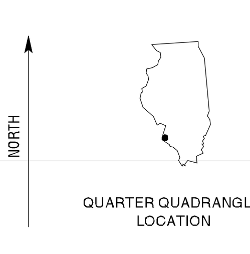
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES 0.5 0 0.5

FEET 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS 0.5 0 0.5

1 WATERLOO NW (SHEET 13)
2 WATERLOO NE (SHEET 14)
3 PADERBORN NW (SHEET 15)
4 WATERLOO SW (SHEET 19)
5 PADERBORN SW (SHEET 21)
6 RENAULT NW (SHEET 27)
7 RENAULT NE (SHEET 28)
8 AMES NW (SHEET 29)

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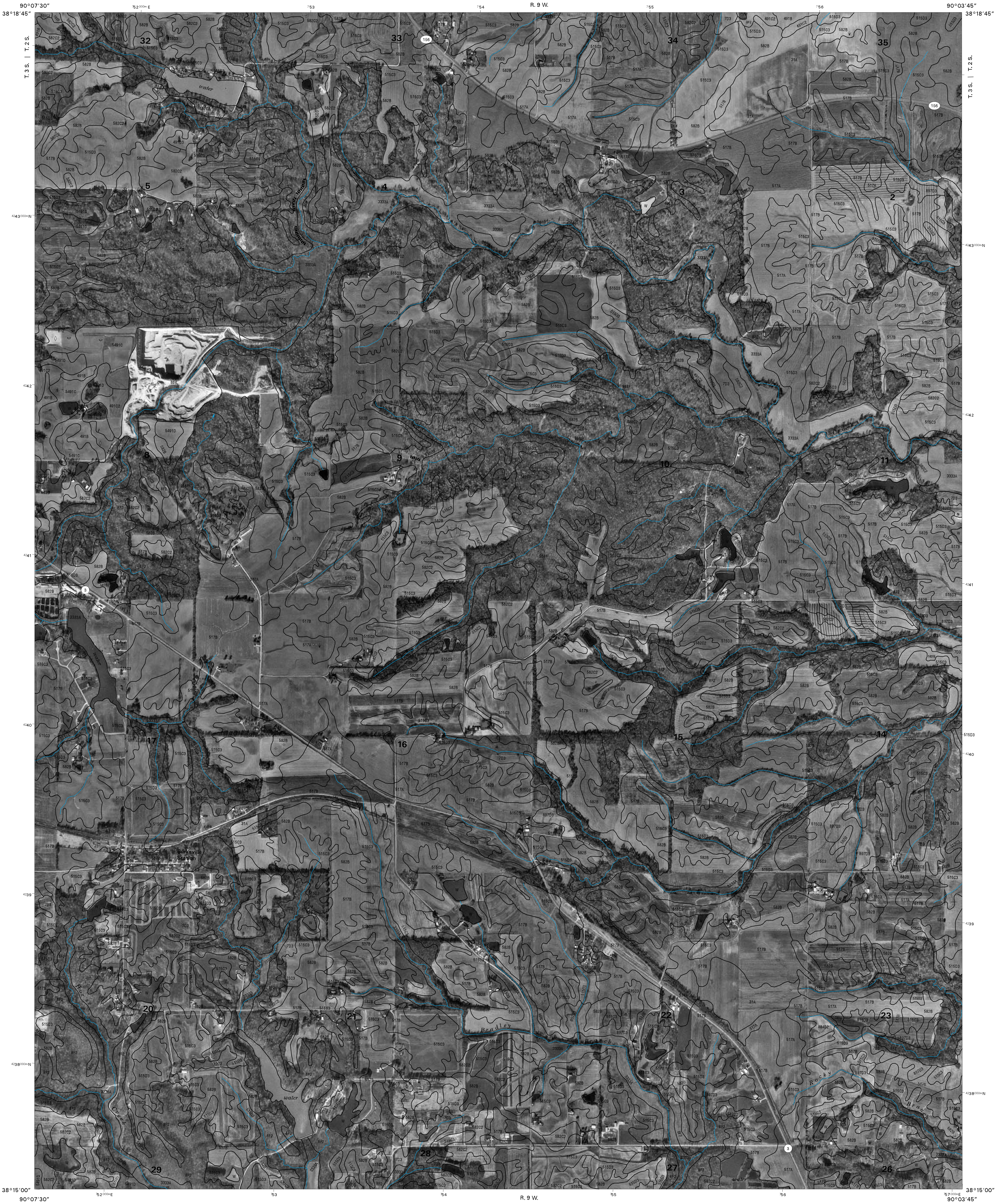
WATERLOO SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 20 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
PADERBORN SW QUADRANGLE
SHEET NUMBER 21 OF 41



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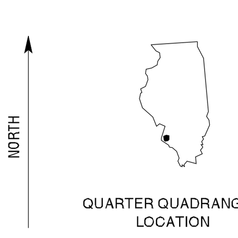
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 WATERLOO NE (SHEET 14)
2 PADERBORN NW (SHEET 15)
3 PADERBORN NE (SHEET 16)
4 WATERLOO SE (SHEET 20)
5 PADERBORN SE (SHEET 22)
6 RENAULT NE (SHEET 28)
7 AMES NW (SHEET 29)
8 AMES NE (SHEET 30)

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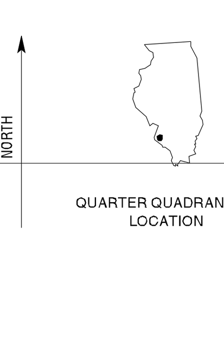
PADERBORN SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
PADERBORN SE QUADRANGLE
SHEET NUMBER 22 OF 41

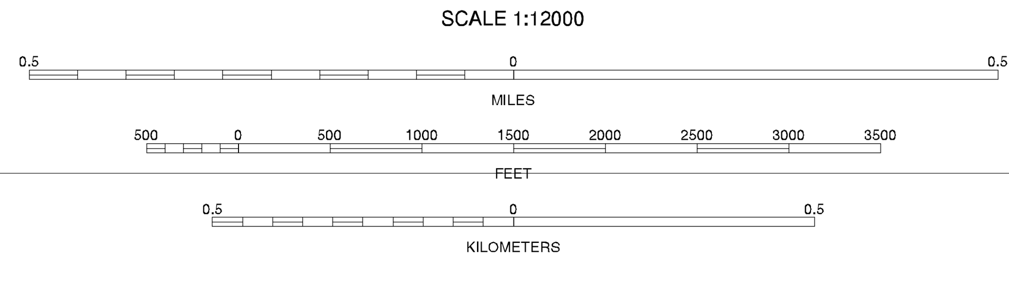
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 PADERBORN NW (SHEET 15)
2 PADERBORN NE (SHEET 16)
3 NEW ATHENS WEST NW
4 PADERBORN SW (SHEET 21)
5 NEW ATHENS WEST SW (SHEET 23)
6 AMES NW (SHEET 29)
7 AMES NE (SHEET 30)
8 RED BUD NW (SHEET 31)

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PADERBORN SE, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
NEW ATHENS WEST SW QUADRANGLE
SHEET NUMBER 23 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 PADERBORN NE (SHEET 16)
2 NEW ATHENS WEST NW
3 NEW ATHENS WEST NE
4 PADERBORN SE (SHEET 22)
5 NEW ATHENS WEST SE (SHEET 24)
6 AMES NE (SHEET 30)
7 RED BUD NW (SHEET 31)
8 RED BUD NE (SHEET 32)

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NEW ATHENS WEST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 23 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
NEW ATHENS WEST SE QUADRANGLE
SHEET NUMBER 24 OF 41

89°56′15″ | R. 8 W. | R. 7 W. | 89°52′30″
38°18′45″ | 38°18′45″

38°15′00″ | 38°15′00″
89°56′15″ | R. 8 W. | R. 7 W. | 89°52′30″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 NEW ATHENS WEST NW
2 NEW ATHENS WEST NE
3 NEW ATHENS EAST NW
4 NEW ATHENS WEST SW (SHEET 23)
5 NEW ATHENS EAST SW
6 RED BUD NW (SHEET 31)
7 RED BUD NE (SHEET 32)
8 BALDWIN NW

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NEW ATHENS WEST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 24 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
SELMA NW QUADRANGLE
SHEET NUMBER 25 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

1	2	3
4		5
6	7	8

1 HERCULANEUM SE
2 VALMEYER SW (SHEET 17)
3 VALMEYER SE (SHEET 18)
4 FESTUS NE
5 SELMA NE (SHEET 26)
6 FESTUS SE
7 SELMA SW (SHEET 33)
8 SELMA SE (SHEET 34)

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SELMA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 25 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
SELMA NE QUADRANGLE
SHEET NUMBER 26 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 VALMEYER SW (SHEET 17)
2 VALMEYER SE (SHEET 18)
3 WATERLOO SW (SHEET 19)
4 SELMA NW (SHEET 25)
5 RENAULT NW (SHEET 27)
6 SELMA SW (SHEET 33)
7 SELMA SE (SHEET 34)
8 RENAULT SW (SHEET 35)

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SELMA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 26 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
RENAULT NW QUADRANGLE
SHEET NUMBER 27 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 VALMEYER SE (SHEET 18)
2 WATERLOO SW (SHEET 19)
3 WATERLOO SE (SHEET 20)
4 SELMA NE (SHEET 26)
5 RENAULT NE (SHEET 28)
6 SELMA SE (SHEET 34)
7 RENAULT SW (SHEET 35)
8 RENAULT SE (SHEET 36)

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RENAULT NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 27 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
RENAULT NE QUADRANGLE
SHEET NUMBER 28 OF 41

90°11'15" R. 10 W. | R. 9 W. 90°07'30"
38°15'00" 38°15'00"

38°11'15" 38°11'15"
90°11'15" R. 10 W. | R. 9 W. 90°07'30"

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 WATERLOO SW (SHEET 19)
2 WATERLOO SE (SHEET 20)
3 PADERBORN SW (SHEET 21)
4 RENAULT NW (SHEET 27)
5 AMES NW (SHEET 29)
6 RENAULT SW (SHEET 35)
7 RENAULT SE (SHEET 36)
8 AMES SW (SHEET 37)

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RENAULT NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 28 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 WATERLOO SE (SHEET 20)
2 PADERBORN SW (SHEET 21)
3 PADERBORN SE (SHEET 22)
4 RENAULT NE (SHEET 28)
5 AMES NE (SHEET 30)
6 RENAULT SE (SHEET 36)
7 AMES SW (SHEET 37)
8 AMES SE (SHEET 38)

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AMES NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 29 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MONROE COUNTY, ILLINOIS
AMES NE QUADRANGLE
SHEET NUMBER 30 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

1	2	3
4		5
6	7	8

1 PADERBORN SW (SHEET 21)
2 PADERBORN SE (SHEET 22)
3 NEW ATHENS WEST SW (SHEET 23)
4 AMES NW (SHEET 29)
5 RED BUD NW (SHEET 31)
6 AMES SW (SHEET 37)
7 AMES SE (SHEET 38)
8 RED BUD SW

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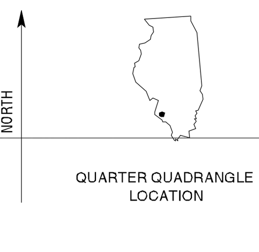
AMES NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 30 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
RED BUD NW QUADRANGLE
SHEET NUMBER 31 OF 41

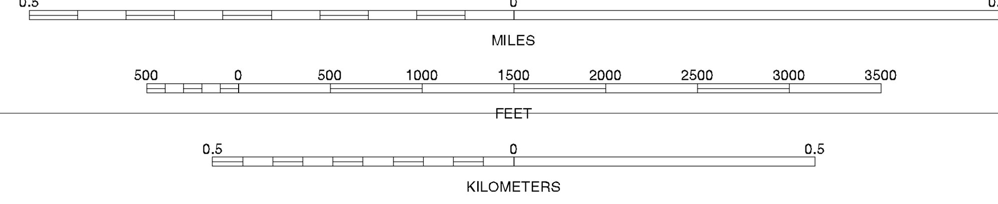
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



1	2	3
4		5
6	7	8

1 PADERBORN SE (SHEET 22)
2 NEW ATHENS WEST SW (SHEET 23)
3 NEW ATHENS WEST SE (SHEET 24)
4 AMES NE (SHEET 30)
5 RED BUD NE (SHEET 32)
6 AMES SE (SHEET 38)
7 RED BUD SW
8 RED BUD SE

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RED BUD NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 31 OF 41

89°56′15″ 38°15′00″ R. 8 W. | R. 7 W. 89°52′30″ 38°15′00″

38°11′15″ 89°56′15″ R. 8 W. | R. 7 W. 38°11′15″ 89°52′30″

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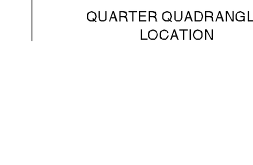
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 NEW ATHENS WEST SW (SHEET 23)
2 NEW ATHENS WEST SE (SHEET 24)
3 NEW ATHENS EAST SW
4 RED BUD NW (SHEET 31)
5 BALDWIN NW
6 RED BUD SW
7 RED BUD SE
8 BALDWIN SW

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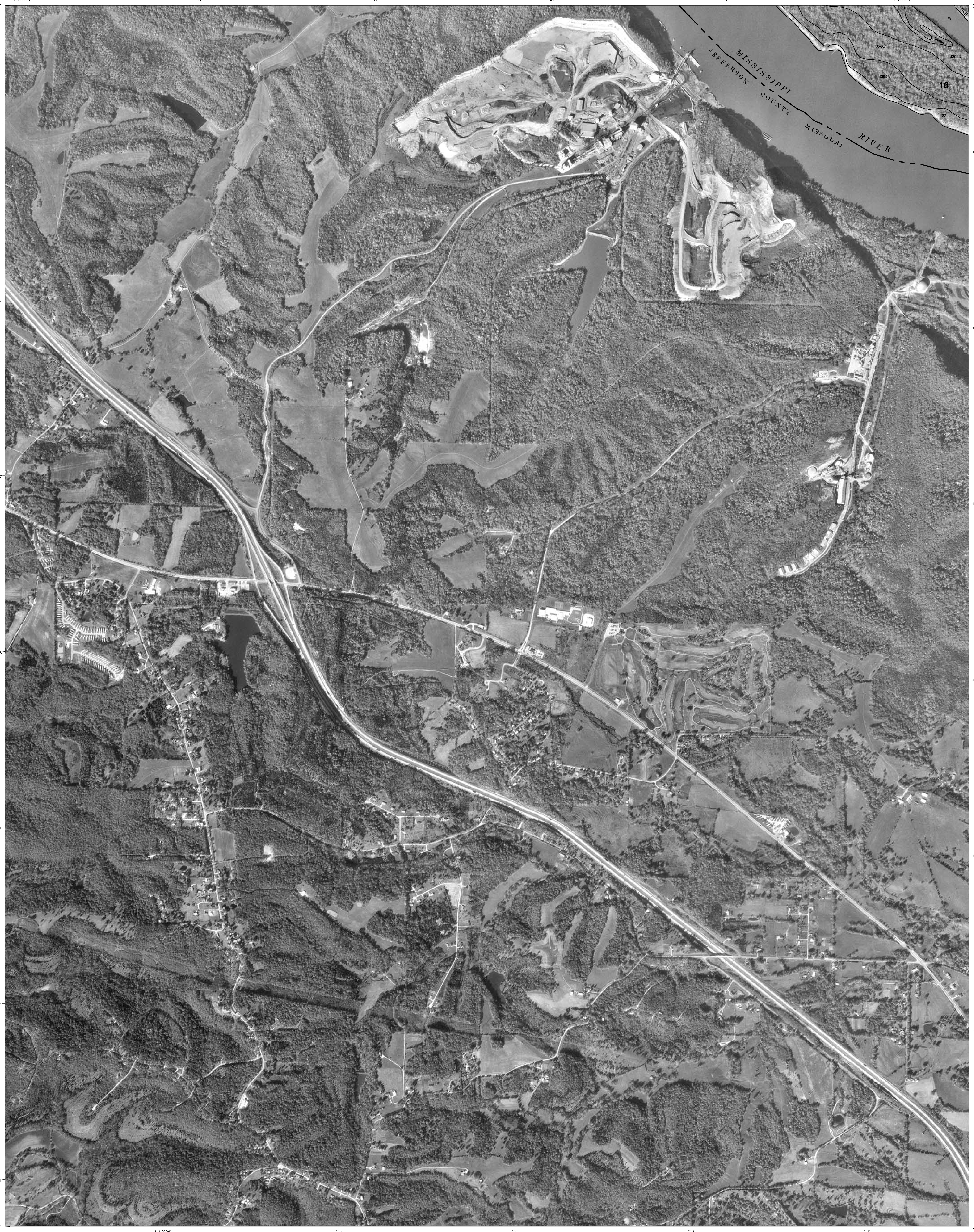
RED BUD NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 32 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
SELMA SW QUADRANGLE
SHEET NUMBER 33 OF 41

90°22′30″ 38°11′15″ 730000m E 731 732 733 734 R. 11 W. 735000m E 90°18′45″ 38°11′15″

T. 4 S.



4228000m N 4227 4226 4225 4224 4223000m N

38°07′30″ 90°22′30″ 731000m E 732 733 734 R. 11 W. 735 38°07′30″ 90°18′45″

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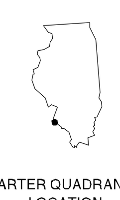
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 FESTUS NE
2 SELMA NW (SHEET 25)
3 SELMA NE (SHEET 26)
4 FESTUS SE
5 SELMA SE (SHEET 34)
6 HALIFAX NE
7 DANBY NW
8 DANBY NE

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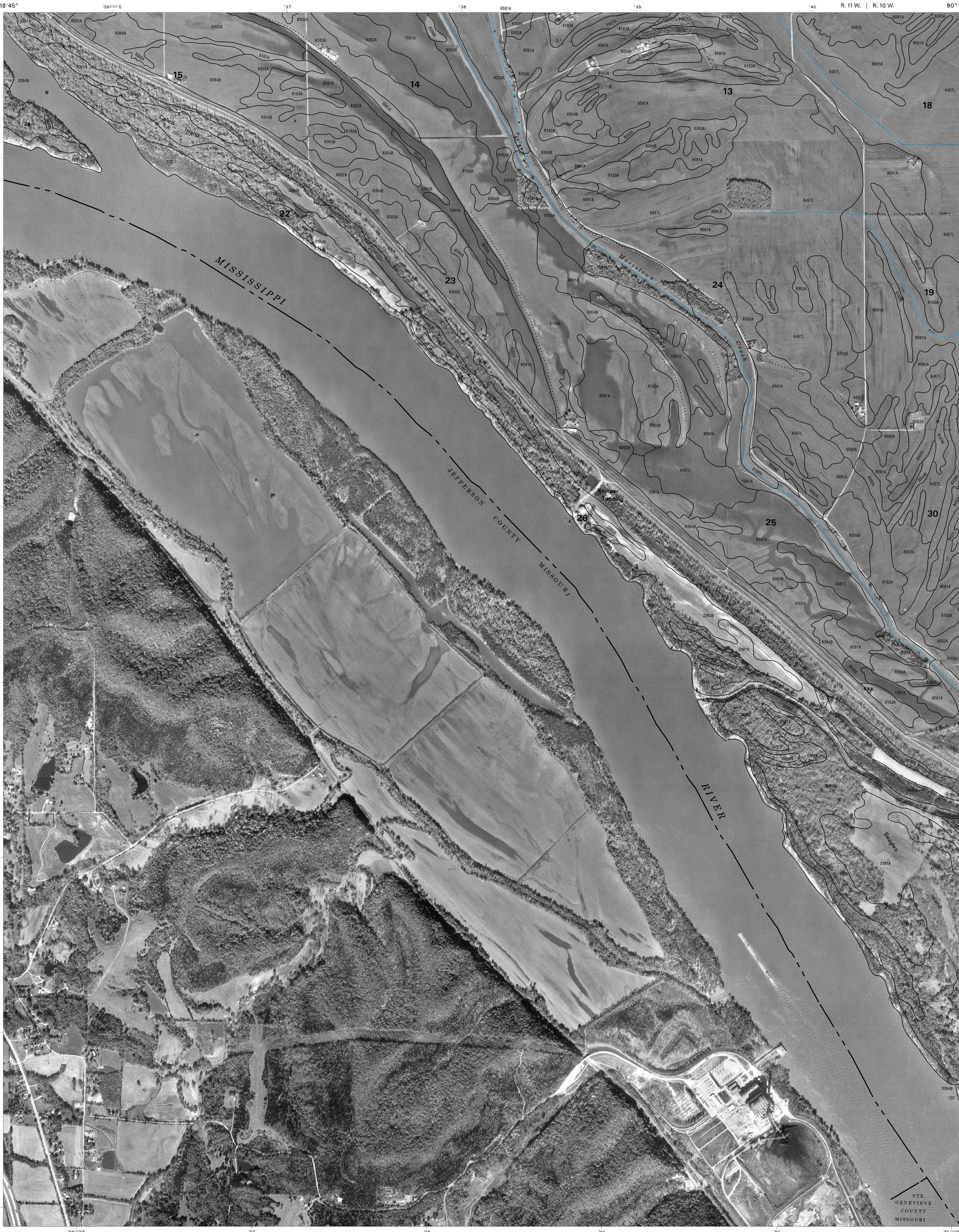
SELMA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 33 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

90°18′45″ 38°11′15″

R. 11 W. | R. 10 W. 90°15′00″ 38°11′15″



38°07′30″ 90°18′45″

R. 11 W. | R. 10 W. 38°07′30″ 90°15′00″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 SELMA NW (SHEET 25)
2 SELMA NE (SHEET 26)
3 RENAULT NW (SHEET 27)
4 SELMA SW (SHEET 33)
5 RENAULT SW (SHEET 35)
6 DANBY NW
7 DANBY NE
8 BLOOMSDALE NW (SHEET 39)

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SELMA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 34 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
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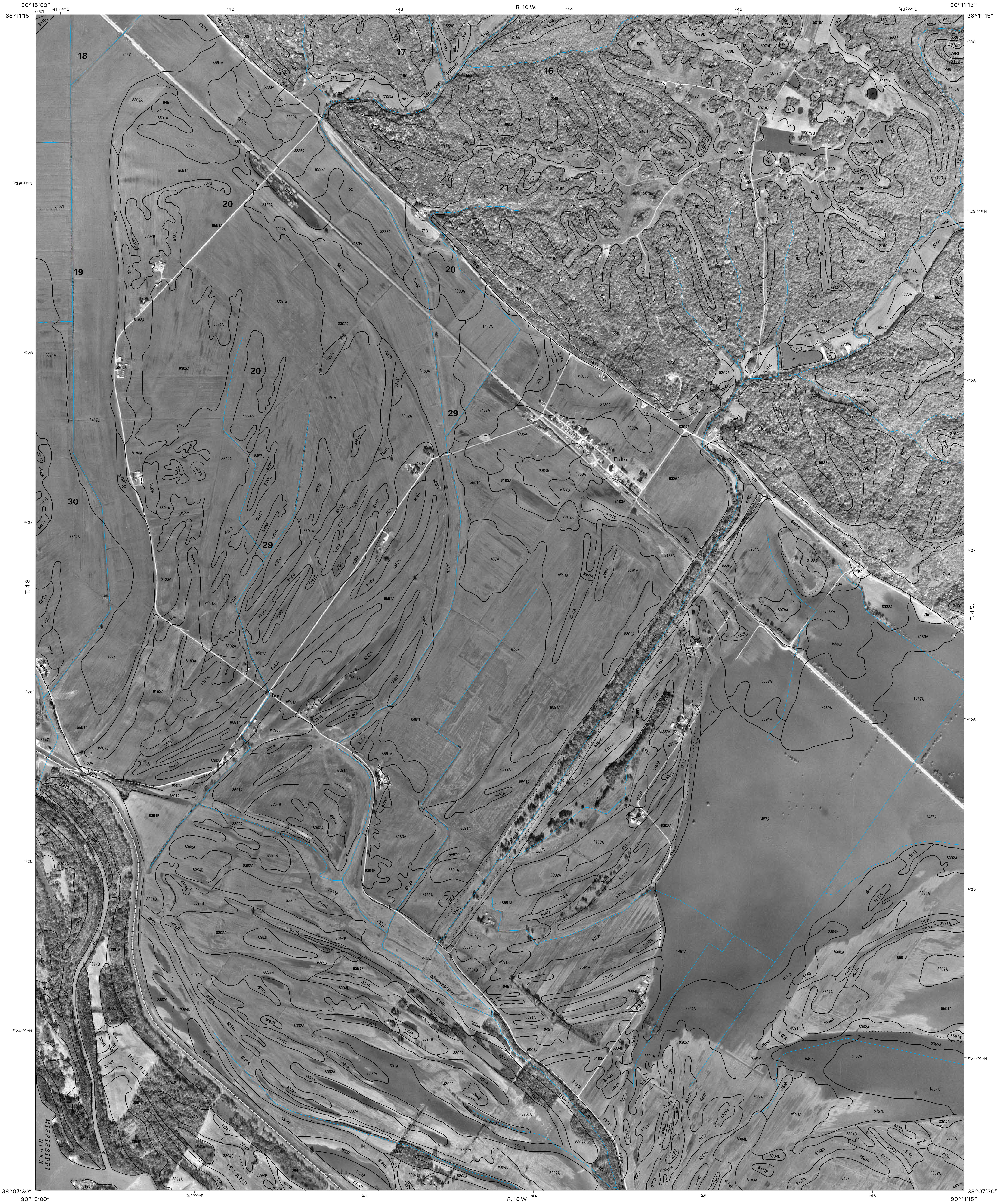
MONROE COUNTY, ILLINOIS
RENAULT SW QUADRANGLE
SHEET NUMBER 35 OF 41



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1 SELMA NE (SHEET 26)
2 RENAULT NW (SHEET 27)
3 RENAULT NE (SHEET 28)
4 SELMA SE (SHEET 34)
5 RENAULT SE (SHEET 36)
6 DANBY NE
7 BLOOMSDALE NW (SHEET 39)
8 BLOOMSDALE NE (SHEET 40)

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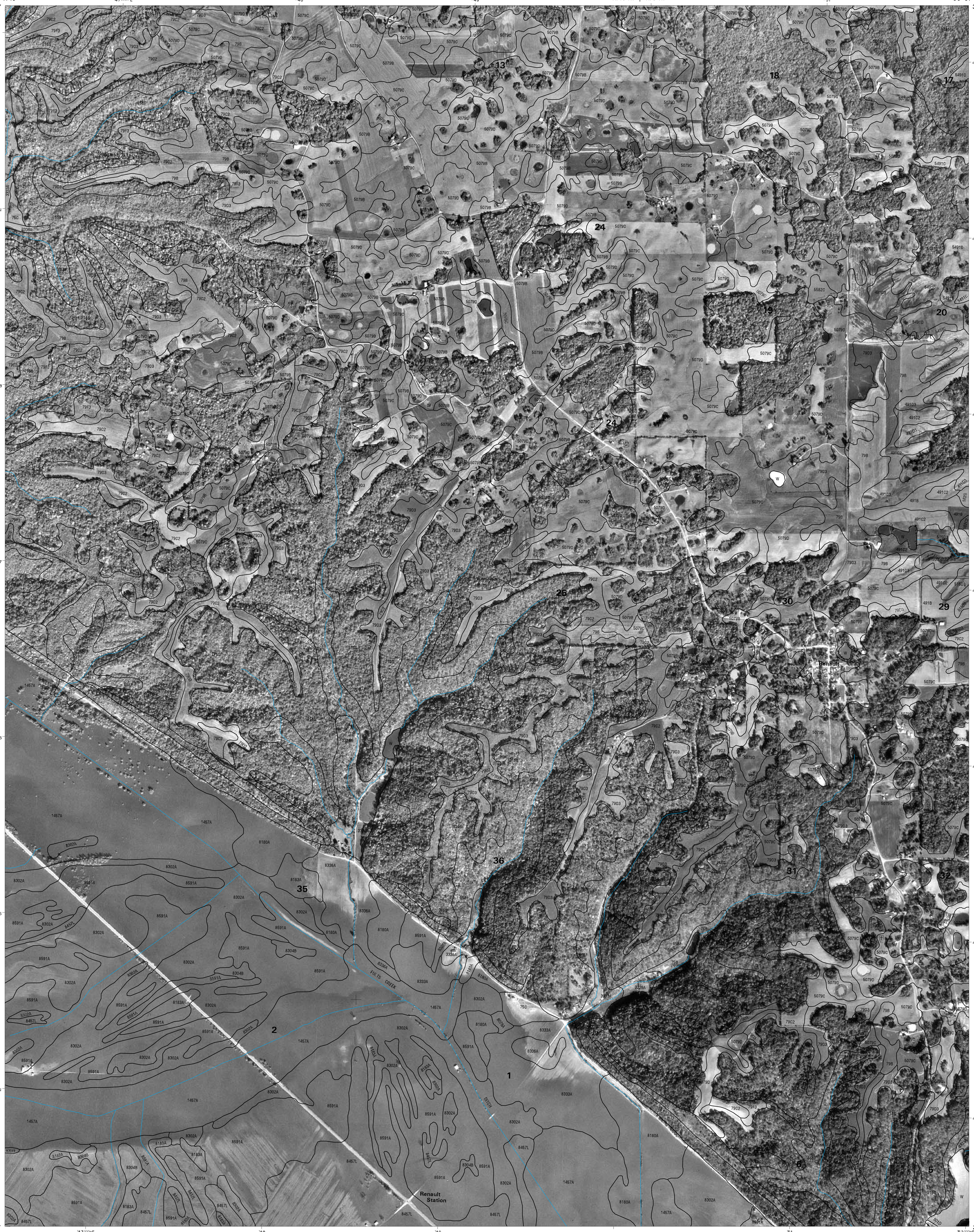
RENAULT SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 35 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
RENAULT SE QUADRANGLE
SHEET NUMBER 36 OF 41



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1 RENAULT NW (SHEET 27)
2 RENAULT NE (SHEET 28)
3 AMES NW (SHEET 29)
4 RENAULT SW (SHEET 35)
5 AMES SW (SHEET 37)
6 BLOOMSDALE NW (SHEET 39)
7 BLOOMSDALE NE (SHEET 40)
8 PRAIRIE DU ROCHER NW (SHEET 41)

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RENAULT SE, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MONROE COUNTY, ILLINOIS
AMES SW QUADRANGLE
SHEET NUMBER 37 OF 41

90°07'30" 38°11'15" — R. 9 W. — 90°03'45" 38°11'15"

T. 5 S. | T. 4 S.

38°07'30" 90°07'30" — R. 9 W. — 38°07'30" 90°03'45"

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

1	2	3
4		5
6	7	8

1 RENAULT NE (SHEET 28)
2 AMES NW (SHEET 29)
3 AMES NE (SHEET 30)
4 RENAULT SE (SHEET 36)
5 AMES SE (SHEET 38)
6 BLOOMSDALE NE (SHEET 40)
7 PRAIRIE DU ROCHER NW (SHEET 41)
8 PRAIRIE DU ROCHER NE

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UNITED STATES
DEPARTMENT OF AGRICULTURE
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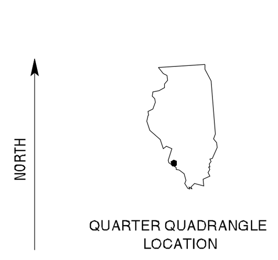
MONROE COUNTY, ILLINOIS
AMES SE QUADRANGLE
SHEET NUMBER 38 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE
LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 AMES NW (SHEET 29)
2 AMES NE (SHEET 30)
3 RED BUD NW (SHEET 31)
4 AMES SW (SHEET 37)
5 RED BUD SW
6 PRAIRIE DU ROCHER NW (SHEET 41)
7 PRAIRIE DU ROCHER NE
8 EVANSVILLE NW

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AMES SE, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
DEPARTMENT OF AGRICULTURE
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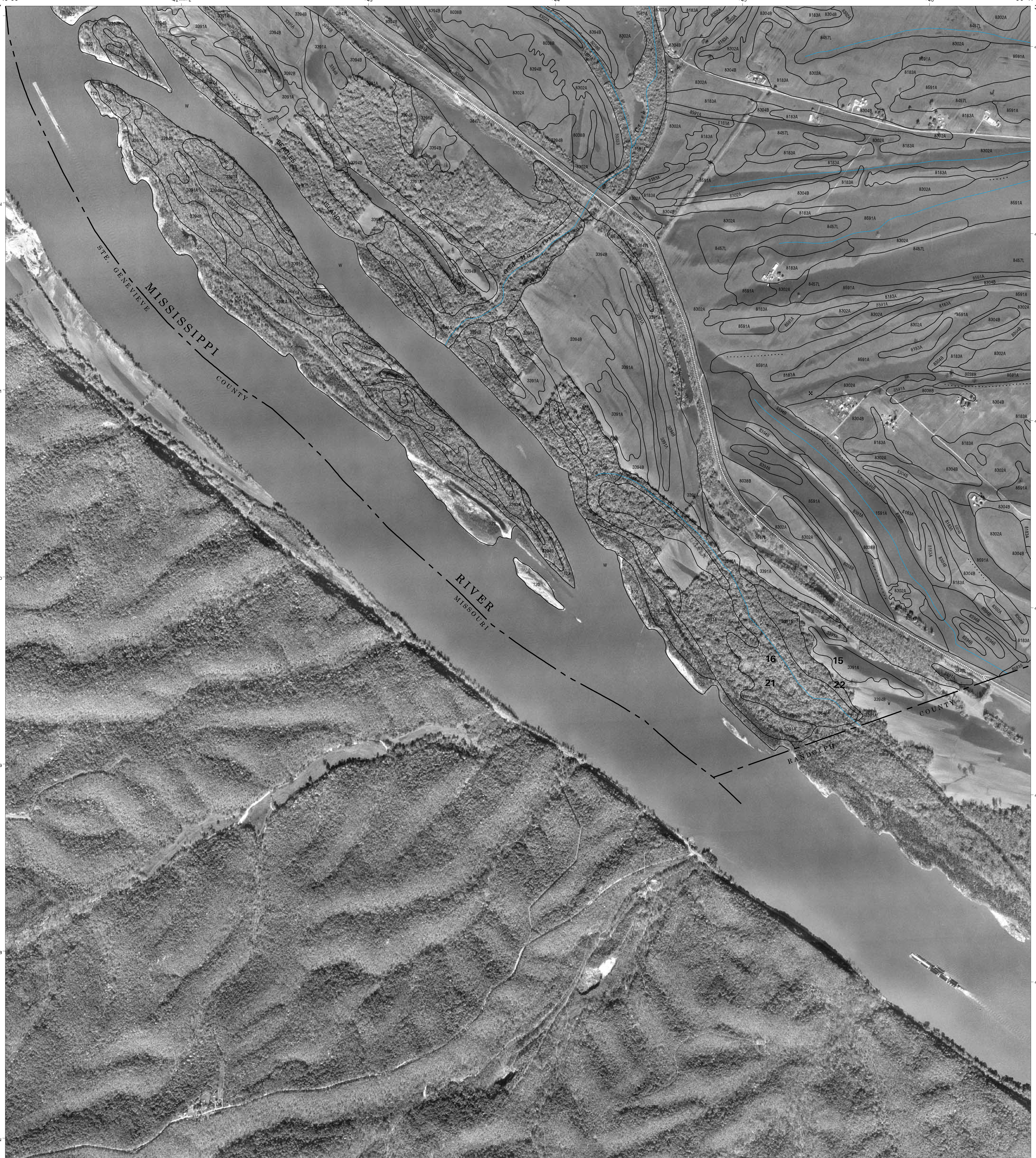
MONROE COUNTY, ILLINOIS
BLOOMSDALE NW QUADRANGLE
SHEET NUMBER 39 OF 41



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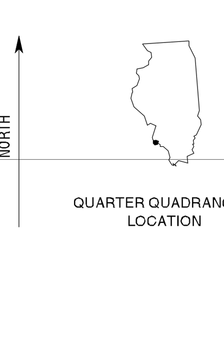
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 SELMA SE (SHEET 34)
2 RENAULT SW (SHEET 35)
3 RENAULT SE (SHEET 36)
4 DANBY NE
5 BLOOMSDALE NE (SHEET 40)
6 DANBY SE
7 BLOOMSDALE SW
8 BLOOMSDALE SE

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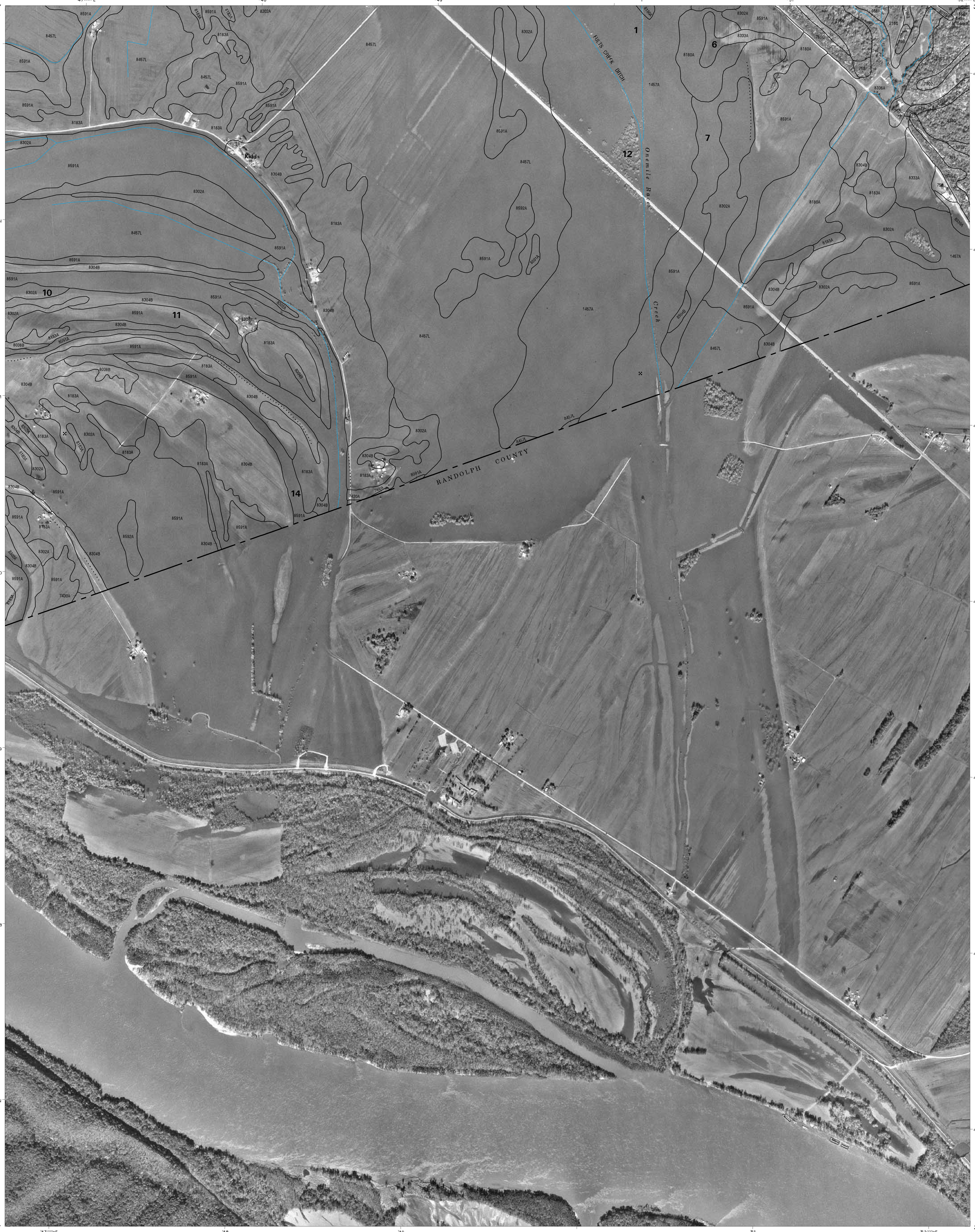
BLOOMSDALE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 39 OF 41

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

90°11'15"
38°07'30"
90°07'30"
38°07'30"



38°03'45"
90°11'15"
R. 10 W. | R. 9 W.
38°03'45"
90°07'30"

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
4		5
6	7	8

1 RENAULT SW (SHEET 35)
2 RENAULT SE (SHEET 36)
3 AMES SW (SHEET 37)
4 BLOOMSDALE NW (SHEET 39)
5 PRAIRIE DU ROCHER NW (SHEET 41)
6 BLOOMSDALE SW
7 BLOOMSDALE SE
8 PRAIRIE DU ROCHER SW

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BLOOMSDALE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 40 OF 41

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1988-1993 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

1	2	3
4		5
6	7	8

1 RENAULT SE (SHEET 36)
2 AMES SW (SHEET 37)
3 AMES SE (SHEET 38)
4 BLOOMSDALE NE (SHEET 40)
5 PRAIRIE DU ROCHER NE
6 BLOOMSDALE SE
7 PRAIRIE DU ROCHER SW
8 PRAIRIE DU ROCHER SE

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PRAIRIE DU ROCHER NW, ILLINOIS
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